

**Medicaid Analytic Extract  
Provider Characteristics  
(MAXPC)**

**State-Specific Validation Tables,  
2010**

**Michigan**

May 31, 2013

Deo Bencio  
Mei-ling Mason



**MATHEMATICA**  
Policy Research

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Contract Number:  
HHSM-500-2005-00025I

Task Number:  
HHSM-500-T0002

Mathematica Reference Number:  
06759.660

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## ACRONYMS

CMS	Centers for Medicare & Medicaid Services
CY	Calendar year
FY	Federal fiscal year
HIPAA	Health Insurance Portability and Accountability Act
ID	Identification/identifier
IP	Inpatient
LT	Long-term care
MAX	Medicaid Analytic Extract
MAXPC	MAX Provider Characteristics File
MSIS	Medicaid Statistical Information System
NPI	National Provider Identifier
NPPES	National Plan and Provider Enumeration System
OT	Other services
RX	Drug
UPIN	Unique Physician Identification Number

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## INTRODUCTION

The Medicaid Statistical Information System (MSIS) files and the corresponding research-friendly Medicaid Analytic Extract (MAX) files support a wide range of studies on Medicaid enrollment, service use, and expenditures. There is currently considerable interest at the Centers for Medicare & Medicaid Services (CMS) in also examining health reform proposals, program integrity, and access-to-care issues among certain types of Medicaid providers. However, it has not been possible to easily conduct provider-based research activities because the provider identification numbers collected in MSIS are largely unedited, undocumented, and state specific.

The advent of the Health Insurance Portability and Accountability Act (HIPAA) mandated covered entities such as health care providers, health plans, and health care clearinghouses to obtain and use a National Provider Identifier (NPI) in all administrative and financial HIPAA transactions.<sup>1</sup> The NPI is a unique 10-digit, sequentially assigned national identification number, unstructured so as not to carry any way information such as the state or medical specialty of the health care provider who “owns” the identifier. Beginning in February 2009, states were required to include NPIs on claims submitted to MSIS. The main limitation of this identifier, however, is that certain classes of nonmedical providers are not required to obtain an NPI. Nonetheless, the availability of the NPI on MSIS claims makes the development of a uniform provider characteristic file more feasible. The MAX Provider Characteristics (MAXPC) file is such a file.

Once the state’s MAXPC file is created, validation tables are produced. Validation tables are designed as a diagnostic tool to determine whether linkages are working in the expected manner and consist of a set of seven tables. The first six tables focus on provider ID types in the IP, LT, OT, and RX files. These provider types are: IP billing, LT billing, OT servicing, OT billing, RX billing, and RX prescribing provider IDs. The seventh table examines all provider IDs in all of the files. Each file-specific validation table is used to detect linkage issues that are peculiar to a given file type. The all-provider table is used to monitor the overall quality of the linkages of all provider IDs. The design of the validation tables is very similar across file types. The measures are grouped into seven sections as denoted by the shaded rows. The first section describes measures for each unique provider in the file. The second section focuses on the source of NPIs. The third section focuses on provider IDs that link to NPPES, followed by a section for provider IDs that link to state provider files. The fifth section focuses on the primary taxonomy of providers that link to NPPES. Among providers, taxonomies are classified into two groups: (1) individuals or groups of individuals, and (2) nonindividuals. The sixth section focuses on individual providers showing their sole proprietorship status. Finally, the seventh section focuses on provider organizations and their ownership status.

The columns in the state-specific tables describe the annual statistics for up to three years, followed by a column describing the percentage change between year one and year two, the

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<sup>1</sup> CMS. “National Provider Identifier (NPI) Overview.” Available at <http://www.cms.gov/nationalProvIdentstand/>.

percentage change between year two and year three, if applicable, followed by the expected range of values across years, and finally, an indicator showing whether the percentage change between the two most recent years being compared is within the expected range.

The primary source of data used in the MAXPC 2010 files were the MSIS Valid claims files. The following measures in the MAXPC file were derived from original, unadjusted claims:

- Number of IP Claims for Provider
- Number of Beneficiaries with IP Claims for Provider
- Number of LT Claims for Provider
- Number of Beneficiaries with LT Claims for Provider
- Number of OT Claims for Provider
- Number of Beneficiaries with OT Claims for Provider
- Number of RX Claims for provider
- Number of Beneficiaries with RX Claims for Provider.

**2009-2010 MAX IP Billing Provider Characteristics Validation Table**

State: MI

Produced: 02/28/2013

Measure	2009 Value	2010 Value	% Change 2009-2010	Cross Year Expected Range	Cross Year Within Range <sup>a</sup>
<b>IP Providers</b>					
Number of provider IDs	1,154	1,654	43.33	30% (+/-)	No
% billing provider on IP claim	72.4	69.0	-4.66	N/A	N/A
% NPI billing provider on IP claim	31.3	34.9	11.71	N/A	N/A
% also a provider on LT claim	21.1	19.2	-9.07	N/A	N/A
% also a provider on OT claim	66.0	78.6	19.03	N/A	N/A
% also a provider on RX claim	15.1	19.5	29.12	N/A	N/A
% provider IDs with NPI	84.2	81.0	-3.89	30% (+/-)	Yes
% provider IDs linked to NPPES	83.5	80.8	-3.23	30% (+/-)	Yes
% provider IDs with or without NPI but linked to state provider file	0.0	0.0	Div by 0	N/A	N/A
average number of IP claims	191.8	304.9	58.99	30% (+/-)	No
average number of beneficiaries with IP claims	152.4	208.6	36.90	30% (+/-)	No
<b>Provider IDs with NPI</b>					
Number of provider IDs with NPI	972	1,339	37.76	30% (+/-)	No
% NPI source = MSIS	99.0	97.5	-1.53	30% (+/-)	Yes
% NPI source = NPPES	1.0	2.5	146.74	30% (+/-)	Yes
% NPI source = state cross-reference file	0.0	0.0	Div by 0	N/A	N/A
<b>Provider IDs Linked to NPPES</b>					
Number of provider IDs linked to NPPES	964	1,337	38.69	30% (+/-)	No
% linked via NPI	99.0	97.5	-1.52	30% (+/-)	Yes
% linked via Medicaid legacy provider ID	0.9	2.4	156.21	30% (+/-)	Yes
% linked via Medicare UPIN	0.1	0.2	44.23	30% (+/-)	Yes
% with name prefix	0.3	0.4	44.37	30% (+/-)	Yes
% with first name	0.5	1.1	116.18	30% (+/-)	Yes
% with middle name	0.2	0.9	333.82	30% (+/-)	Yes
% with last name	0.5	1.1	116.18	30% (+/-)	Yes
% with name suffix	0.0	0.0	Div by 0	30% (+/-)	N/A
% male	0.4	0.6	44.10	30% (+/-)	Yes
% female	0.1	0.5	403.85	30% (+/-)	Yes
% with credential	0.5	1.1	116.18	30% (+/-)	Yes
% with business name	99.5	98.7	-0.83	30% (+/-)	Yes
% with address line 1	100.0	99.8	-0.22	30% (+/-)	Yes
% with city	100.0	99.8	-0.22	30% (+/-)	Yes
% with state	100.0	99.8	-0.22	30% (+/-)	Yes
% state = IP state code	62.4	42.4	-32.09	30% (+/-)	No
% with zip code	100.0	99.8	-0.22	30% (+/-)	Yes
% with primary taxonomy	99.7	99.5	-0.21	30% (+/-)	Yes
% with provider entity type = individual	0.5	1.1	116.18	30% (+/-)	Yes
% with provider entity type = organization	99.5	98.7	-0.83	30% (+/-)	Yes
<b>Provider IDs with or without NPI but linked to state provider file</b>					
Number of provider IDs with or without NPI linked to state provider file	0	0	Div by 0	N/A	N/A
<b>Provider IDs with NPPES Primary Taxonomy</b>					
Number of provider IDs with NPPES primary taxonomy	965	1,330	37.82	30% (+/-)	No
% individual or group of individuals	9.7	4.9	-49.83	30% (+/-)	Yes
% allopathic and osteopathic physicians	5.6	2.9	-47.61	30% (+/-)	Yes
% behavioral health and social service providers	1.9	1.1	-43.54	30% (+/-)	Yes

Source: Medicaid Analytic eExtract (MAX) Provider Characteristics Files, 2009-2010.

<sup>a</sup> "Yes" signifies that either (1) the percent change between 2009 and 2010 is within the cross-year expected range or (2) both the 2009 and the 2010 values are less than 10. "No" signifies that both (1) the percent change between 2009 and 2010 is over or under the cross-year expected range and (2) either the 2009 or the 2010 value is greater than 10.

**2009-2010 MAX IP Billing Provider Characteristics Validation Table**

State: MI

Produced: 02/28/2013

Measure	2009 Value	2010 Value	% Change 2009-2010	Cross Year Expected Range	Cross Year Within Range <sup>a</sup>
% chiropractic providers	0.0	0.0	Div by 0	30% (+/-)	N/A
% dental providers	0.2	0.0	-100.00	30% (+/-)	Yes
% dietary and nutritional service providers	0.0	0.0	Div by 0	30% (+/-)	N/A
% emergency medical service providers	0.0	0.2	Div by 0	30% (+/-)	N/A
% eye and vision service providers	0.0	0.0	Div by 0	30% (+/-)	N/A
% nursing service providers	0.2	0.0	-100.00	30% (+/-)	Yes
% nursing service-related providers	0.0	0.0	Div by 0	30% (+/-)	N/A
% other service providers	0.0	0.2	Div by 0	30% (+/-)	N/A
% pharmacy service providers	0.1	0.0	-100.00	30% (+/-)	Yes
% physician assistants and advanced practice nursing providers	1.3	0.5	-60.95	30% (+/-)	Yes
% podiatric medicine and surgery service providers	0.0	0.1	Div by 0	30% (+/-)	N/A
% respiratory, developmental, rehabilitative, and restorative service providers	0.0	0.0	Div by 0	30% (+/-)	N/A
% speech, language, and hearing service providers	0.0	0.0	Div by 0	30% (+/-)	N/A
% student health care	0.0	0.0	Div by 0	30% (+/-)	N/A
% technologists, technicians, and other technical service providers	0.0	0.0	Div by 0	30% (+/-)	N/A
% group of individuals with multi- or single specialty	0.4	0.0	-100.00	30% (+/-)	Yes
% nonindividuals	90.3	95.1	5.38	30% (+/-)	Yes
% agencies	0.7	1.4	86.62	30% (+/-)	Yes
% ambulatory health care facilities	2.3	2.1	-7.68	30% (+/-)	Yes
% hospital units	9.7	7.3	-25.13	30% (+/-)	Yes
% hospitals	76.7	82.8	7.95	30% (+/-)	Yes
% laboratories	0.0	0.1	Div by 0	30% (+/-)	N/A
% managed care organizations	0.0	0.0	Div by 0	30% (+/-)	N/A
% nursing and custodial care facilities	0.1	0.3	189.42	30% (+/-)	Yes
% residential treatment facilities	0.0	0.2	Div by 0	30% (+/-)	N/A
% respite care facility	0.0	0.0	Div by 0	30% (+/-)	N/A
% suppliers	0.6	0.9	45.02	30% (+/-)	Yes
% transportation services	0.1	0.2	44.23	30% (+/-)	Yes
% nonmedical	0.0	0.0	Div by 0	N/A	N/A
<b>Provider IDs with Entity Type = Individual</b>					
Number of provider IDs with entity type = individual	5	15	200.00	30% (+/-)	No
% a sole proprietorship	0.0	20.0	Div by 0	30% (+/-)	N/A
% not a sole proprietorship	60.0	80.0	33.33	30% (+/-)	No
% not answered	40.0	0.0	-100.00	N/A	N/A
<b>Provider IDs with Entity Type = Organization</b>					
Number of provider IDs with entity type = organization	959	1,319	37.54	30% (+/-)	No
% organization is a subpart	10.0	12.6	25.72	30% (+/-)	Yes
% organization is not a subpart	75.7	77.1	1.85	30% (+/-)	Yes
% not answered	14.3	10.3	-27.82	N/A	N/A

Source: Medicaid Analytic eXtract (MAX) Provider Characteristics Files, 2009-2010.

<sup>a</sup> "Yes" signifies that either (1) the percent change between 2009 and 2010 is within the cross-year expected range or (2) both the 2009 and the 2010 values are less than 10. "No" signifies that both (1) the percent change between 2009 and 2010 is over or under the cross-year expected range and (2) either the 2009 or the 2010 value is greater than 10.

**2009-2010 MAX LT Billing Provider Characteristics Validation Table**

State: MI

Produced: 02/28/2013

Measure	2009 Value	2010 Value	% Change 2009-2010	Cross Year Expected Range	Cross Year Within Range <sup>a</sup>
<b>LT Providers</b>					
Number of provider IDs	1,714	1,325	-22.70	30% (+/-)	Yes
% billing provider on LT claim	70.7	61.0	-13.76	N/A	N/A
% NPI billing provider on LT claim	31.9	43.0	34.80	N/A	N/A
% also a provider on IP claim	14.2	24.0	68.59	N/A	N/A
% also a provider on OT claim	32.1	33.7	4.71	N/A	N/A
% also a provider on RX claim	5.4	9.7	78.03	N/A	N/A
% provider IDs with NPI	92.6	90.0	-2.84	30% (+/-)	Yes
% provider IDs linked to NPPES	92.4	89.7	-2.84	30% (+/-)	Yes
% provider IDs with or without NPI but linked to state provider file	0.0	0.0	Div by 0	N/A	N/A
average number of LT claims	460.1	607.7	32.09	30% (+/-)	No
average number of beneficiaries with LT claims	80.9	91.8	13.49	30% (+/-)	Yes
<b>Provider IDs with NPI</b>					
Number of provider IDs with NPI	1,587	1,192	-24.89	30% (+/-)	Yes
% NPI source = MSIS	99.3	98.3	-0.99	30% (+/-)	Yes
% NPI source = NPPES	0.7	1.7	142.14	30% (+/-)	Yes
% NPI source = state cross-reference file	0.0	0.0	Div by 0	N/A	N/A
<b>Provider IDs Linked to NPPES</b>					
Number of provider IDs linked to NPPES	1,583	1,189	-24.89	30% (+/-)	Yes
% linked via NPI	99.3	98.3	-0.99	30% (+/-)	Yes
% linked via Medicaid legacy provider ID	0.7	1.7	142.01	30% (+/-)	Yes
% linked via Medicare UPIN	0.0	0.0	Div by 0	30% (+/-)	N/A
% with name prefix	0.0	0.1	Div by 0	30% (+/-)	N/A
% with first name	0.0	0.1	Div by 0	30% (+/-)	N/A
% with middle name	0.0	0.1	Div by 0	30% (+/-)	N/A
% with last name	0.0	0.1	Div by 0	30% (+/-)	N/A
% with name suffix	0.0	0.0	Div by 0	30% (+/-)	N/A
% male	0.0	0.1	Div by 0	30% (+/-)	N/A
% female	0.0	0.0	Div by 0	30% (+/-)	N/A
% with credential	0.0	0.1	Div by 0	30% (+/-)	N/A
% with business name	100.0	99.7	-0.25	30% (+/-)	Yes
% with address line 1	100.0	99.8	-0.17	30% (+/-)	Yes
% with city	100.0	99.8	-0.17	30% (+/-)	Yes
% with state	100.0	99.8	-0.17	30% (+/-)	Yes
% state = LT state code	96.1	96.2	0.14	30% (+/-)	Yes
% with zip code	100.0	99.8	-0.17	30% (+/-)	Yes
% with primary taxonomy	98.5	97.8	-0.68	30% (+/-)	Yes
% with provider entity type = individual	0.0	0.1	Div by 0	30% (+/-)	N/A
% with provider entity type = organization	100.0	99.7	-0.25	30% (+/-)	Yes
<b>Provider IDs with or without NPI but linked to state provider file</b>					
Number of provider IDs with or without NPI linked to state provider file	0	0	Div by 0	N/A	N/A
<b>Provider IDs with NPPES Primary Taxonomy</b>					
Number of provider IDs with NPPES primary taxonomy	1,560	1,163	-25.45	30% (+/-)	Yes
% individual or group of individuals	3.4	2.2	-34.18	30% (+/-)	Yes
% allopathic and osteopathic physicians	2.0	1.3	-35.08	30% (+/-)	Yes
% behavioral health and social service providers	0.9	0.9	5.46	30% (+/-)	Yes

Source: Medicaid Analytic eXtract (MAX) Provider Characteristics Files, 2009-2010.

<sup>a</sup> "Yes" signifies that either (1) the percent change between 2009 and 2010 is within the cross-year expected range or (2) both the 2009 and the 2010 values are less than 10. "No" signifies that both (1) the percent change between 2009 and 2010 is over or under the cross-year expected range and (2) either the 2009 or the 2010 value is greater than 10.

**2009-2010 MAX LT Billing Provider Characteristics Validation Table**

State: MI

Produced: 02/28/2013

Measure	2009 Value	2010 Value	% Change 2009-2010	Cross Year Expected Range	Cross Year Within Range <sup>a</sup>
% chiropractic providers	0.0	0.0	Div by 0	30% (+/-)	N/A
% dental providers	0.1	0.0	-100.00	30% (+/-)	Yes
% dietary and nutritional service providers	0.0	0.0	Div by 0	30% (+/-)	N/A
% emergency medical service providers	0.0	0.0	Div by 0	30% (+/-)	N/A
% eye and vision service providers	0.0	0.0	Div by 0	30% (+/-)	N/A
% nursing service providers	0.0	0.0	Div by 0	30% (+/-)	N/A
% nursing service-related providers	0.0	0.0	Div by 0	30% (+/-)	N/A
% other service providers	0.0	0.0	Div by 0	30% (+/-)	N/A
% pharmacy service providers	0.0	0.0	Div by 0	30% (+/-)	N/A
% physician assistants and advanced practice nursing providers	0.4	0.0	-100.00	30% (+/-)	Yes
% podiatric medicine and surgery service providers	0.0	0.0	Div by 0	30% (+/-)	N/A
% respiratory, developmental, rehabilitative, and restorative service providers	0.0	0.0	Div by 0	30% (+/-)	N/A
% speech, language, and hearing service providers	0.0	0.0	Div by 0	30% (+/-)	N/A
% student health care	0.0	0.0	Div by 0	30% (+/-)	N/A
% technologists, technicians, and other technical service providers	0.0	0.0	Div by 0	30% (+/-)	N/A
% group of individuals with multi- or single specialty	0.0	0.0	Div by 0	30% (+/-)	N/A
% nonindividuals	96.6	97.8	1.20	30% (+/-)	Yes
% agencies	0.6	1.6	183.19	30% (+/-)	Yes
% ambulatory health care facilities	1.7	1.4	-17.46	30% (+/-)	Yes
% hospital units	1.1	2.2	105.14	30% (+/-)	Yes
% hospitals	7.2	13.6	89.25	30% (+/-)	No
% laboratories	0.0	0.0	Div by 0	30% (+/-)	N/A
% managed care organizations	0.0	0.0	Div by 0	30% (+/-)	N/A
% nursing and custodial care facilities	85.7	78.2	-8.80	30% (+/-)	Yes
% residential treatment facilities	0.0	0.0	Div by 0	30% (+/-)	N/A
% respite care facility	0.0	0.0	Div by 0	30% (+/-)	N/A
% suppliers	0.4	0.8	101.04	30% (+/-)	Yes
% transportation services	0.0	0.0	Div by 0	30% (+/-)	N/A
% nonmedical	0.0	0.0	Div by 0	N/A	N/A
<b>Provider IDs with Entity Type = Individual</b>					
Number of provider IDs with entity type = individual	0	1	Div by 0	30% (+/-)	N/A
% a sole proprietorship	0.0	0.0	Div by 0	30% (+/-)	N/A
% not a sole proprietorship	0.0	100.0	Div by 0	30% (+/-)	N/A
% not answered	0.0	0.0	Div by 0	N/A	N/A
<b>Provider IDs with Entity Type = Organization</b>					
Number of provider IDs with entity type = organization	1,583	1,186	-25.08	30% (+/-)	Yes
% organization is a subpart	14.4	14.1	-2.24	30% (+/-)	Yes
% organization is not a subpart	63.9	66.6	4.30	30% (+/-)	Yes
% not answered	21.7	19.3	-11.15	N/A	N/A

Source: Medicaid Analytic eXtract (MAX) Provider Characteristics Files, 2009-2010.

<sup>a</sup> "Yes" signifies that either (1) the percent change between 2009 and 2010 is within the cross-year expected range or (2) both the 2009 and the 2010 values are less than 10. "No" signifies that both (1) the percent change between 2009 and 2010 is over or under the cross-year expected range and (2) either the 2009 or the 2010 value is greater than 10.

**2009-2010 MAX OT Servicing Provider Characteristics Validation Table**

State: MI

Produced: 02/28/2013

Measure	2009 Value	2010 Value	% Change 2009-2010	Cross Year Expected Range	Cross Year Within Range <sup>a</sup>
<b>OT Providers</b>					
Number of provider IDs	195,587	198,167	1.32	30% (+/-)	Yes
% billing provider on OT claim	44.4	61.9	39.24	N/A	N/A
% servicing provider on OT claim	96.9	94.1	-2.85	N/A	N/A
% NPI servicing provider on OT claim	18.3	17.5	-4.40	N/A	N/A
% also a provider on IP claim	0.4	0.6	66.84	N/A	N/A
% also a provider on LT claim	0.3	0.2	-20.38	N/A	N/A
% also a provider on RX claim	16.0	18.2	13.49	N/A	N/A
% provider IDs with NPI	49.8	36.2	-27.32	30% (+/-)	Yes
% provider IDs linked to NPPES	49.4	36.1	-26.99	30% (+/-)	Yes
% provider IDs with or without NPI but linked to state provider file	0.0	0.0	Div by 0	N/A	N/A
average number of OT claims	827.4	886.3	7.12	30% (+/-)	Yes
average number of beneficiaries with OT claims	96.0	137.1	42.89	30% (+/-)	No
<b>Provider IDs with NPI</b>					
Number of provider IDs with NPI	97,398	71,720	-26.36	30% (+/-)	Yes
% NPI source = MSIS	95.3	89.4	-6.25	30% (+/-)	Yes
% NPI source = NPPES	4.7	10.6	127.92	30% (+/-)	No
% NPI source = state cross-reference file	0.0	0.0	Div by 0	N/A	N/A
<b>Provider IDs Linked to NPPES</b>					
Number of provider IDs linked to NPPES	96,586	71,445	-26.03	30% (+/-)	Yes
% linked via NPI	95.3	89.3	-6.26	30% (+/-)	Yes
% linked via Medicaid legacy provider ID	4.7	10.6	126.85	30% (+/-)	No
% linked via Medicare UPIN	0.0	0.0	128.57	30% (+/-)	Yes
% with name prefix	17.3	23.3	34.51	30% (+/-)	No
% with first name	35.1	48.1	36.98	30% (+/-)	No
% with middle name	26.8	37.0	38.34	30% (+/-)	No
% with last name	35.1	48.1	36.98	30% (+/-)	No
% with name suffix	0.9	1.1	25.47	30% (+/-)	Yes
% male	22.7	31.0	36.32	30% (+/-)	No
% female	12.3	17.1	38.18	30% (+/-)	No
% with credential	33.9	46.5	37.25	30% (+/-)	No
% with business name	64.9	51.6	-20.48	30% (+/-)	Yes
% with address line 1	100.0	99.7	-0.33	30% (+/-)	Yes
% with city	100.0	99.7	-0.33	30% (+/-)	Yes
% with state	100.0	99.7	-0.33	30% (+/-)	Yes
% state = OT state code	85.5	83.8	-2.05	30% (+/-)	Yes
% with zip code	100.0	99.7	-0.33	30% (+/-)	Yes
% with primary taxonomy	99.1	97.8	-1.34	30% (+/-)	Yes
% with provider entity type = individual	35.1	48.1	36.98	30% (+/-)	No
% with provider entity type = organization	64.9	51.6	-20.48	30% (+/-)	Yes
<b>Provider IDs with or without NPI but linked to state provider file</b>					
Number of provider IDs with or without NPI linked to state provider file	0	0	Div by 0	N/A	N/A
<b>Provider IDs with NPPES Primary Taxonomy</b>					
Number of provider IDs with NPPES primary taxonomy	96,235	69,853	-27.41	30% (+/-)	Yes
% individual or group of individuals	67.3	75.5	12.17	30% (+/-)	Yes
% allopathic and osteopathic physicians	44.0	46.3	5.25	30% (+/-)	Yes

Source: Medicaid Analytic eExtract (MAX) Provider Characteristics Files, 2009-2010.

<sup>a</sup> "Yes" signifies that either (1) the percent change between 2009 and 2010 is within the cross-year expected range or (2) both the 2009 and the 2010 values are less than 10. "No" signifies that both (1) the percent change between 2009 and 2010 is over or under the cross-year expected range and (2) either the 2009 or the 2010 value is greater than 10.

**2009-2010 MAX OT Servicing Provider Characteristics Validation Table**

State: MI

Produced: 02/28/2013

Measure	2009 Value	2010 Value	% Change 2009-2010	Cross Year Expected Range	Cross Year Within Range <sup>a</sup>
% behavioral health and social service providers	2.8	3.7	33.19	30% (+/-)	Yes
% chiropractic providers	2.0	3.4	69.20	30% (+/-)	Yes
% dental providers	4.9	6.8	38.39	30% (+/-)	Yes
% dietary and nutritional service providers	0.0	0.0	8.89	30% (+/-)	Yes
% emergency medical service providers	0.0	0.0	112.50	30% (+/-)	Yes
% eye and vision service providers	1.8	2.2	22.00	30% (+/-)	Yes
% nursing service providers	0.2	0.2	12.08	30% (+/-)	Yes
% nursing service-related providers	0.0	0.0	-38.89	30% (+/-)	Yes
% other service providers	0.9	2.4	178.93	30% (+/-)	Yes
% pharmacy service providers	0.1	0.1	6.67	30% (+/-)	Yes
% physician assistants and advanced practice nursing providers	6.3	6.8	7.18	30% (+/-)	Yes
% podiatric medicine and surgery service providers	1.3	1.8	40.30	30% (+/-)	Yes
% respiratory, developmental, rehabilitative, and restorative service providers	0.7	1.2	74.96	30% (+/-)	Yes
% speech, language, and hearing service providers	0.5	0.4	-5.70	30% (+/-)	Yes
% student health care	0.0	0.1	156.00	30% (+/-)	Yes
% technologists, technicians, and other technical service providers	0.0	0.0	61.90	30% (+/-)	Yes
% group of individuals with multi- or single specialty	1.8	0.0	-100.00	30% (+/-)	Yes
% nonindividuals	32.7	24.5	-25.10	30% (+/-)	Yes
% agencies	2.7	2.5	-8.54	30% (+/-)	Yes
% ambulatory health care facilities	3.3	5.3	61.31	30% (+/-)	Yes
% hospital units	0.2	0.1	-13.10	30% (+/-)	Yes
% hospitals	17.5	6.6	-62.30	30% (+/-)	No
% laboratories	0.4	0.6	31.35	30% (+/-)	Yes
% managed care organizations	0.0	0.2	314.63	30% (+/-)	Yes
% nursing and custodial care facilities	0.3	0.2	-25.08	30% (+/-)	Yes
% residential treatment facilities	0.1	0.1	152.54	30% (+/-)	Yes
% respite care facility	0.0	0.0	-55.00	30% (+/-)	Yes
% suppliers	7.1	7.6	7.99	30% (+/-)	Yes
% transportation services	1.1	1.2	8.13	30% (+/-)	Yes
% nonmedical	0.0	0.0	Div by 0	N/A	N/A
<b>Provider IDs with Entity Type = Individual</b>					
Number of provider IDs with entity type = individual	33,882	34,330	1.32	30% (+/-)	Yes
% a sole proprietorship	21.6	20.9	-3.59	30% (+/-)	Yes
% not a sole proprietorship	67.9	69.9	3.00	30% (+/-)	Yes
% not answered	10.5	9.3	-11.97	N/A	N/A
<b>Provider IDs with Entity Type = Organization</b>					
Number of provider IDs with entity type = organization	62,704	36,882	-41.18	30% (+/-)	No
% organization is a subpart	11.0	10.0	-8.90	30% (+/-)	Yes
% organization is not a subpart	71.2	74.5	4.67	30% (+/-)	Yes
% not answered	17.8	15.5	-13.18	N/A	N/A

Source: Medicaid Analytic eXtract (MAX) Provider Characteristics Files, 2009-2010.

<sup>a</sup> "Yes" signifies that either (1) the percent change between 2009 and 2010 is within the cross-year expected range or (2) both the 2009 and the 2010 values are less than 10. "No" signifies that both (1) the percent change between 2009 and 2010 is over or under the cross-year expected range and (2) either the 2009 or the 2010 value is greater than 10.

# 2009-2010 MAX OT Billing Provider Characteristics Validation Table

State: MI

Produced: 02/28/2013

Measure	2009 Value	2010 Value	% Change 2009-2010	Cross Year Expected Range	Cross Year Within Range <sup>a</sup>
<b>OT Providers</b>					
Number of provider IDs	131,261	134,117	2.18	30% (+/-)	Yes
% billing provider on OT claim	100.0	100.0	0.00	N/A	N/A
% servicing provider on OT claim	66.2	91.3	37.89	N/A	N/A
% NPI servicing provider on OT claim	2.6	5.3	105.53	N/A	N/A
% also a provider on IP claim	0.4	0.7	52.05	N/A	N/A
% also a provider on LT claim	0.3	0.2	-14.98	N/A	N/A
% also a provider on RX claim	2.4	7.5	213.74	N/A	N/A
% provider IDs with NPI	17.9	21.0	17.63	30% (+/-)	Yes
% provider IDs linked to NPPES	17.8	20.9	17.86	30% (+/-)	Yes
% provider IDs with or without NPI but linked to state provider file	0.0	0.0	Div by 0	N/A	N/A
average number of OT claims	920.7	1,041.4	13.11	30% (+/-)	Yes
average number of beneficiaries with OT claims	130.2	148.1	13.75	30% (+/-)	Yes
<b>Provider IDs with NPI</b>					
Number of provider IDs with NPI	23,486	28,228	20.19	30% (+/-)	Yes
% NPI source = MSIS	86.6	75.7	-12.54	30% (+/-)	Yes
% NPI source = NPPES	13.4	24.3	80.74	30% (+/-)	No
% NPI source = state cross-reference file	0.0	0.0	Div by 0	N/A	N/A
<b>Provider IDs Linked to NPPES</b>					
Number of provider IDs linked to NPPES	23,303	28,063	20.43	30% (+/-)	Yes
% linked via NPI	86.4	75.6	-12.60	30% (+/-)	Yes
% linked via Medicaid legacy provider ID	13.5	24.4	80.61	30% (+/-)	No
% linked via Medicare UPIN	0.1	0.1	34.78	30% (+/-)	Yes
% with name prefix	27.0	25.8	-4.39	30% (+/-)	Yes
% with first name	47.8	50.8	6.40	30% (+/-)	Yes
% with middle name	37.4	40.0	7.04	30% (+/-)	Yes
% with last name	47.8	50.8	6.40	30% (+/-)	Yes
% with name suffix	1.4	1.2	-10.88	30% (+/-)	Yes
% male	35.3	33.1	-6.34	30% (+/-)	Yes
% female	12.4	17.7	42.54	30% (+/-)	No
% with credential	46.7	49.2	5.43	30% (+/-)	Yes
% with business name	52.2	48.9	-6.41	30% (+/-)	Yes
% with address line 1	100.0	99.7	-0.29	30% (+/-)	Yes
% with city	100.0	99.7	-0.29	30% (+/-)	Yes
% with state	100.0	99.7	-0.29	30% (+/-)	Yes
% state = OT state code	86.7	83.9	-3.26	30% (+/-)	Yes
% with zip code	100.0	99.7	-0.29	30% (+/-)	Yes
% with primary taxonomy	99.0	98.2	-0.86	30% (+/-)	Yes
% with provider entity type = individual	47.8	50.8	6.40	30% (+/-)	Yes
% with provider entity type = organization	52.2	48.9	-6.41	30% (+/-)	Yes
<b>Provider IDs with or without NPI but linked to state provider file</b>					
Number of provider IDs with or without NPI linked to state provider file	0	0	Div by 0	N/A	N/A
<b>Provider IDs with NPPES Primary Taxonomy</b>					
Number of provider IDs with NPPES primary taxonomy	23,175	27,554	18.90	30% (+/-)	Yes
% individual or group of individuals	60.1	70.7	17.63	30% (+/-)	Yes
% allopathic and osteopathic physicians	40.3	39.0	-3.08	30% (+/-)	Yes

Source: Medicaid Analytic eExtract (MAX) Provider Characteristics Files, 2009-2010.

<sup>a</sup> "Yes" signifies that either (1) the percent change between 2009 and 2010 is within the cross-year expected range or (2) both the 2009 and the 2010 values are less than 10. "No" signifies that both (1) the percent change between 2009 and 2010 is over or under the cross-year expected range and (2) either the 2009 or the 2010 value is greater than 10.

**2009-2010 MAX OT Billing Provider Characteristics Validation Table**

State: MI

Produced: 02/28/2013

Measure	2009 Value	2010 Value	% Change 2009-2010	Cross Year Expected Range	Cross Year Within Range <sup>a</sup>
% behavioral health and social service providers	1.5	6.9	365.20	30% (+/-)	Yes
% chiropractic providers	1.5	3.2	109.48	30% (+/-)	Yes
% dental providers	8.4	9.0	7.86	30% (+/-)	Yes
% dietary and nutritional service providers	0.0	0.1	138.46	30% (+/-)	Yes
% emergency medical service providers	0.0	0.0	38.46	30% (+/-)	Yes
% eye and vision service providers	1.7	1.7	0.30	30% (+/-)	Yes
% nursing service providers	0.3	0.2	-53.01	30% (+/-)	Yes
% nursing service-related providers	0.0	0.0	5.88	30% (+/-)	Yes
% other service providers	1.3	2.3	70.74	30% (+/-)	Yes
% pharmacy service providers	0.2	0.1	-46.32	30% (+/-)	Yes
% physician assistants and advanced practice nursing providers	2.2	4.9	125.42	30% (+/-)	Yes
% podiatric medicine and surgery service providers	1.4	1.5	12.47	30% (+/-)	Yes
% respiratory, developmental, rehabilitative, and restorative service providers	0.4	1.4	261.96	30% (+/-)	Yes
% speech, language, and hearing service providers	0.3	0.3	-8.30	30% (+/-)	Yes
% student health care	0.0	0.0	10.00	30% (+/-)	Yes
% technologists, technicians, and other technical service providers	0.0	0.1	96.15	30% (+/-)	Yes
% group of individuals with multi- or single specialty	0.6	0.0	-100.00	30% (+/-)	Yes
% nonindividuals	39.9	29.3	-26.58	30% (+/-)	Yes
% agencies	3.7	3.0	-20.11	30% (+/-)	Yes
% ambulatory health care facilities	3.5	4.5	28.25	30% (+/-)	Yes
% hospital units	0.3	0.2	-24.57	30% (+/-)	Yes
% hospitals	11.9	9.6	-19.47	30% (+/-)	Yes
% laboratories	0.7	0.9	37.00	30% (+/-)	Yes
% managed care organizations	0.0	0.3	616.28	30% (+/-)	Yes
% nursing and custodial care facilities	0.6	0.3	-57.31	30% (+/-)	Yes
% residential treatment facilities	0.1	0.2	136.84	30% (+/-)	Yes
% respite care facility	0.0	0.0	66.67	30% (+/-)	Yes
% suppliers	16.9	9.1	-46.13	30% (+/-)	No
% transportation services	2.2	1.2	-45.93	30% (+/-)	Yes
% nonmedical	0.0	0.0	Div by 0	N/A	N/A
<b>Provider IDs with Entity Type = Individual</b>					
Number of provider IDs with entity type = individual	11,131	14,262	28.13	30% (+/-)	Yes
% a sole proprietorship	27.1	22.9	-15.75	30% (+/-)	Yes
% not a sole proprietorship	60.9	67.4	10.70	30% (+/-)	Yes
% not answered	11.9	9.7	-18.79	N/A	N/A
<b>Provider IDs with Entity Type = Organization</b>					
Number of provider IDs with entity type = organization	12,172	13,719	12.71	30% (+/-)	Yes
% organization is a subpart	12.2	8.8	-27.92	30% (+/-)	Yes
% organization is not a subpart	73.3	76.4	4.25	30% (+/-)	Yes
% not answered	14.6	14.8	1.94	N/A	N/A

Source: Medicaid Analytic eXtract (MAX) Provider Characteristics Files, 2009-2010.

<sup>a</sup> "Yes" signifies that either (1) the percent change between 2009 and 2010 is within the cross-year expected range or (2) both the 2009 and the 2010 values are less than 10. "No" signifies that both (1) the percent change between 2009 and 2010 is over or under the cross-year expected range and (2) either the 2009 or the 2010 value is greater than 10.

# 2009-2010 MAX RX Billing Provider Characteristics Validation Table

State: MI

Produced: 02/28/2013

Measure	2009 Value	2010 Value	% Change 2009-2010	Cross Year Expected Range	Cross Year Within Range <sup>a</sup>
<b>RX Providers</b>					
Number of provider IDs	11,909	16,106	35.24	30% (+/-)	No
% billing provider on RX claim	97.6	90.2	-7.58	N/A	N/A
% prescribing provider on RX claim	10.6	16.8	59.00	N/A	N/A
% NPI billing provider on RX claim	24.3	57.6	137.22	N/A	N/A
% also a provider on IP claim	0.2	0.6	247.62	N/A	N/A
% also a provider on LT claim	0.1	0.3	152.54	N/A	N/A
% also a provider on OT claim	18.9	44.3	134.74	N/A	N/A
% provider IDs with NPI	53.1	75.0	41.29	30% (+/-)	No
% provider IDs linked to NPPES	52.7	67.5	27.94	30% (+/-)	Yes
% provider IDs with or without NPI but linked to state provider file	0.0	0.0	Div by 0	N/A	N/A
average number of RX claims	1,913.6	1,316.1	-31.22	30% (+/-)	No
average number of beneficiaries with RX claims	248.6	168.1	-32.36	30% (+/-)	No
<b>Provider IDs with NPI</b>					
Number of provider IDs with NPI	6,322	12,080	91.08	30% (+/-)	No
% NPI source = MSIS	91.5	86.6	-5.40	30% (+/-)	Yes
% NPI source = NPPES	8.5	13.4	58.28	30% (+/-)	No
% NPI source = state cross-reference file	0.0	0.0	Div by 0	N/A	N/A
<b>Provider IDs Linked to NPPES</b>					
Number of provider IDs linked to NPPES	6,281	10,868	73.03	30% (+/-)	No
% linked via NPI	91.5	85.1	-6.98	30% (+/-)	Yes
% linked via Medicaid legacy provider ID	8.5	14.8	74.79	30% (+/-)	No
% linked via Medicare UPIN	0.0	0.1	72.92	30% (+/-)	Yes
% with name prefix	0.5	6.6	1,235.43	30% (+/-)	Yes
% with first name	1.1	13.6	1,159.10	30% (+/-)	No
% with middle name	0.7	9.7	1,190.37	30% (+/-)	Yes
% with last name	1.1	13.6	1,159.10	30% (+/-)	No
% with name suffix	0.0	0.3	934.38	30% (+/-)	Yes
% male	0.8	8.0	925.13	30% (+/-)	Yes
% female	0.3	5.6	1,767.55	30% (+/-)	Yes
% with credential	1.0	13.4	1,277.86	30% (+/-)	No
% with business name	98.9	86.1	-12.93	30% (+/-)	Yes
% with address line 1	100.0	99.8	-0.24	30% (+/-)	Yes
% with city	100.0	99.8	-0.24	30% (+/-)	Yes
% with state	100.0	99.8	-0.24	30% (+/-)	Yes
% state = RX state code	91.6	61.5	-32.84	30% (+/-)	No
% with zip code	100.0	99.8	-0.24	30% (+/-)	Yes
% with primary taxonomy	99.1	99.1	-0.02	30% (+/-)	Yes
% with provider entity type = individual	1.1	13.6	1,159.10	30% (+/-)	No
% with provider entity type = organization	98.9	86.1	-12.93	30% (+/-)	Yes
<b>Provider IDs with or without NPI but linked to state provider file</b>					
Number of provider IDs with or without NPI linked to state provider file	0	0	Div by 0	N/A	N/A
<b>Provider IDs with NPPES Primary Taxonomy</b>					
Number of provider IDs with NPPES primary taxonomy	6,240	10,766	72.53	30% (+/-)	No
% individual or group of individuals	8.8	28.4	224.45	30% (+/-)	No
% allopathic and osteopathic physicians	5.8	24.5	318.60	30% (+/-)	No

Source: Medicaid Analytic eXtract (MAX) Provider Characteristics Files, 2009-2010.

<sup>a</sup> "Yes" signifies that either (1) the percent change between 2009 and 2010 is within the cross-year expected range or (2) both the 2009 and the 2010 values are less than 10. "No" signifies that both (1) the percent change between 2009 and 2010 is over or under the cross-year expected range and (2) either the 2009 or the 2010 value is greater than 10.

# 2009-2010 MAX RX Billing Provider Characteristics Validation Table

State: MI

Produced: 02/28/2013

Measure	2009 Value	2010 Value	% Change 2009-2010	Cross Year Expected Range	Cross Year Within Range <sup>a</sup>
% behavioral health and social service providers	0.2	0.2	27.50	30% (+/-)	Yes
% chiropractic providers	0.0	0.0	Div by 0	30% (+/-)	N/A
% dental providers	0.0	0.0	-100.00	30% (+/-)	Yes
% dietary and nutritional service providers	0.0	0.0	Div by 0	30% (+/-)	N/A
% emergency medical service providers	0.0	0.0	Div by 0	30% (+/-)	N/A
% eye and vision service providers	0.0	0.0	Div by 0	30% (+/-)	N/A
% nursing service providers	0.0	0.1	112.50	30% (+/-)	Yes
% nursing service-related providers	0.0	0.0	Div by 0	30% (+/-)	N/A
% other service providers	0.1	1.0	770.54	30% (+/-)	Yes
% pharmacy service providers	2.2	1.1	-49.68	30% (+/-)	Yes
% physician assistants and advanced practice nursing providers	0.2	1.3	492.86	30% (+/-)	Yes
% podiatric medicine and surgery service providers	0.0	0.2	Div by 0	30% (+/-)	N/A
% respiratory, developmental, rehabilitative, and restorative service providers	0.0	0.0	18.75	30% (+/-)	Yes
% speech, language, and hearing service providers	0.0	0.0	Div by 0	30% (+/-)	N/A
% student health care	0.0	0.0	Div by 0	30% (+/-)	N/A
% technologists, technicians, and other technical service providers	0.0	0.0	Div by 0	30% (+/-)	N/A
% group of individuals with multi- or single specialty	0.1	0.0	-100.00	30% (+/-)	Yes
% nonindividuals	91.2	71.6	-21.57	30% (+/-)	Yes
% agencies	1.0	1.2	14.11	30% (+/-)	Yes
% ambulatory health care facilities	1.2	3.4	177.59	30% (+/-)	Yes
% hospital units	0.0	0.0	-12.50	30% (+/-)	Yes
% hospitals	0.2	0.5	150.00	30% (+/-)	Yes
% laboratories	0.0	0.0	Div by 0	30% (+/-)	N/A
% managed care organizations	0.1	0.1	27.50	30% (+/-)	Yes
% nursing and custodial care facilities	0.0	0.0	75.00	30% (+/-)	Yes
% residential treatment facilities	0.0	0.0	Div by 0	30% (+/-)	N/A
% respite care facility	0.0	0.0	-12.50	30% (+/-)	Yes
% suppliers	88.6	66.2	-25.28	30% (+/-)	Yes
% transportation services	0.0	0.0	Div by 0	30% (+/-)	N/A
% nonmedical	0.0	0.0	Div by 0	N/A	N/A
<b>Provider IDs with Entity Type = Individual</b>					
Number of provider IDs with entity type = individual	68	1,482	2,079.41	30% (+/-)	No
% a sole proprietorship	29.4	13.2	-55.04	30% (+/-)	No
% not a sole proprietorship	54.4	77.5	42.49	30% (+/-)	No
% not answered	16.2	9.2	-42.85	N/A	N/A
<b>Provider IDs with Entity Type = Organization</b>					
Number of provider IDs with entity type = organization	6,213	9,360	50.65	30% (+/-)	No
% organization is a subpart	16.9	30.2	78.38	30% (+/-)	No
% organization is not a subpart	74.4	63.9	-14.11	30% (+/-)	Yes
% not answered	8.7	5.9	-31.91	N/A	N/A

Source: Medicaid Analytic eXtract (MAX) Provider Characteristics Files, 2009-2010.

<sup>a</sup> "Yes" signifies that either (1) the percent change between 2009 and 2010 is within the cross-year expected range or (2) both the 2009 and the 2010 values are less than 10. "No" signifies that both (1) the percent change between 2009 and 2010 is over or under the cross-year expected range and (2) either the 2009 or the 2010 value is greater than 10.

**2009-2010 MAX RX Prescribing Provider Characteristics Validation Table**

State: MI

Produced: 02/28/2013

Measure	2009 Value	2010 Value	% Change 2009-2010	Cross Year Expected Range	Cross Year Within Range <sup>a</sup>
<b>RX Providers</b>					
Number of provider IDs	68,783	78,252	13.77	30% (+/-)	Yes
% billing provider on RX claim	1.7	2.5	45.66	N/A	N/A
% prescribing provider on RX claim	100.0	100.0	0.00	N/A	N/A
% NPI billing provider on RX claim	1.6	1.3	-22.46	N/A	N/A
% also a provider on IP claim	0.2	0.3	43.42	N/A	N/A
% also a provider on LT claim	0.1	0.1	0.00	N/A	N/A
% also a provider on OT claim	43.8	40.8	-6.95	N/A	N/A
% provider IDs with NPI	20.3	21.0	3.43	30% (+/-)	Yes
% provider IDs linked to NPPES	20.1	21.0	4.11	30% (+/-)	Yes
% provider IDs with or without NPI but linked to state provider file	0.0	0.0	Div by 0	N/A	N/A
average number of RX claims	395.7	288.4	-27.10	30% (+/-)	Yes
average number of beneficiaries with RX claims	65.5	52.8	-19.49	30% (+/-)	Yes
<b>Provider IDs with NPI</b>					
Number of provider IDs with NPI	13,946	16,410	17.67	30% (+/-)	Yes
% NPI source = MSIS	92.2	87.2	-5.40	30% (+/-)	Yes
% NPI source = NPPES	7.8	12.8	63.51	30% (+/-)	No
% NPI source = state cross-reference file	0.0	0.0	Div by 0	N/A	N/A
<b>Provider IDs Linked to NPPES</b>					
Number of provider IDs linked to NPPES	13,853	16,407	18.44	30% (+/-)	Yes
% linked via NPI	92.1	87.2	-5.34	30% (+/-)	Yes
% linked via Medicaid legacy provider ID	7.7	12.7	64.28	30% (+/-)	No
% linked via Medicare UPIN	0.2	0.2	-15.56	30% (+/-)	Yes
% with name prefix	40.3	43.3	7.39	30% (+/-)	Yes
% with first name	76.8	83.9	9.32	30% (+/-)	Yes
% with middle name	59.5	64.1	7.68	30% (+/-)	Yes
% with last name	76.8	83.9	9.32	30% (+/-)	Yes
% with name suffix	1.9	1.9	-1.01	30% (+/-)	Yes
% male	50.4	55.8	10.62	30% (+/-)	Yes
% female	26.4	28.2	6.85	30% (+/-)	Yes
% with credential	74.9	82.0	9.45	30% (+/-)	Yes
% with business name	23.2	15.7	-32.36	30% (+/-)	No
% with address line 1	100.0	99.6	-0.36	30% (+/-)	Yes
% with city	100.0	99.6	-0.36	30% (+/-)	Yes
% with state	100.0	99.6	-0.36	30% (+/-)	Yes
% state = RX state code	89.4	89.6	0.24	30% (+/-)	Yes
% with zip code	100.0	99.6	-0.36	30% (+/-)	Yes
% with primary taxonomy	99.4	98.5	-0.83	30% (+/-)	Yes
% with provider entity type = individual	76.8	83.9	9.32	30% (+/-)	Yes
% with provider entity type = organization	23.2	15.7	-32.36	30% (+/-)	No
<b>Provider IDs with or without NPI but linked to state provider file</b>					
Number of provider IDs with or without NPI linked to state provider file	0	0	Div by 0	N/A	N/A
<b>Provider IDs with NPPES Primary Taxonomy</b>					
Number of provider IDs with NPPES primary taxonomy	13,821	16,167	16.97	30% (+/-)	Yes
% individual or group of individuals	83.5	90.3	8.19	30% (+/-)	Yes
% allopathic and osteopathic physicians	47.6	57.8	21.55	30% (+/-)	Yes

Source: Medicaid Analytic eXtract (MAX) Provider Characteristics Files, 2009-2010.

<sup>a</sup> "Yes" signifies that either (1) the percent change between 2009 and 2010 is within the cross-year expected range or (2) both the 2009 and the 2010 values are less than 10. "No" signifies that both (1) the percent change between 2009 and 2010 is over or under the cross-year expected range and (2) either the 2009 or the 2010 value is greater than 10.

**2009-2010 MAX RX Prescribing Provider Characteristics Validation Table**

State: MI

Produced: 02/28/2013

Measure	2009 Value	2010 Value	% Change 2009-2010	Cross Year Expected Range	Cross Year Within Range <sup>a</sup>
% behavioral health and social service providers	0.9	0.6	-32.64	30% (+/-)	Yes
% chiropractic providers	0.2	0.2	-11.61	30% (+/-)	Yes
% dental providers	18.6	16.2	-12.72	30% (+/-)	Yes
% dietary and nutritional service providers	0.0	0.0	35.71	30% (+/-)	Yes
% emergency medical service providers	0.0	0.0	171.43	30% (+/-)	Yes
% eye and vision service providers	3.9	3.2	-17.08	30% (+/-)	Yes
% nursing service providers	0.1	0.1	-19.51	30% (+/-)	Yes
% nursing service-related providers	0.0	0.0	-100.00	30% (+/-)	Yes
% other service providers	0.9	2.0	109.54	30% (+/-)	Yes
% pharmacy service providers	0.1	0.0	-46.25	30% (+/-)	Yes
% physician assistants and advanced practice nursing providers	8.5	7.9	-7.11	30% (+/-)	Yes
% podiatric medicine and surgery service providers	1.9	1.9	1.42	30% (+/-)	Yes
% respiratory, developmental, rehabilitative, and restorative service providers	0.1	0.1	-9.48	30% (+/-)	Yes
% speech, language, and hearing service providers	0.1	0.0	-52.31	30% (+/-)	Yes
% student health care	0.1	0.2	239.22	30% (+/-)	Yes
% technologists, technicians, and other technical service providers	0.0	0.0	Div by 0	30% (+/-)	N/A
% group of individuals with multi- or single specialty	0.5	0.0	-100.00	30% (+/-)	Yes
% nonindividuals	16.5	9.7	-41.46	30% (+/-)	No
% agencies	0.6	0.5	-15.54	30% (+/-)	Yes
% ambulatory health care facilities	1.5	1.3	-9.49	30% (+/-)	Yes
% hospital units	0.2	0.2	-0.45	30% (+/-)	Yes
% hospitals	6.0	4.9	-17.20	30% (+/-)	Yes
% laboratories	0.0	0.2	260.47	30% (+/-)	Yes
% managed care organizations	0.0	0.0	121.43	30% (+/-)	Yes
% nursing and custodial care facilities	0.1	0.1	-8.05	30% (+/-)	Yes
% residential treatment facilities	0.0	0.0	342.86	30% (+/-)	Yes
% respite care facility	0.0	0.0	-57.14	30% (+/-)	Yes
% suppliers	8.0	2.3	-71.02	30% (+/-)	Yes
% transportation services	0.0	0.0	-13.89	30% (+/-)	Yes
% nonmedical	0.0	0.0	Div by 0	N/A	N/A
<b>Provider IDs with Entity Type = Individual</b>					
Number of provider IDs with entity type = individual	10,636	13,771	29.48	30% (+/-)	Yes
% a sole proprietorship	20.3	19.4	-4.43	30% (+/-)	Yes
% not a sole proprietorship	70.8	72.7	2.69	30% (+/-)	Yes
% not answered	8.9	7.9	-11.31	N/A	N/A
<b>Provider IDs with Entity Type = Organization</b>					
Number of provider IDs with entity type = organization	3,217	2,577	-19.89	30% (+/-)	Yes
% organization is a subpart	10.8	8.4	-21.70	30% (+/-)	Yes
% organization is not a subpart	74.4	76.8	3.15	30% (+/-)	Yes
% not answered	14.8	14.8	-0.07	N/A	N/A

Source: Medicaid Analytic eXtract (MAX) Provider Characteristics Files, 2009-2010.

<sup>a</sup> "Yes" signifies that either (1) the percent change between 2009 and 2010 is within the cross-year expected range or (2) both the 2009 and the 2010 values are less than 10. "No" signifies that both (1) the percent change between 2009 and 2010 is over or under the cross-year expected range and (2) either the 2009 or the 2010 value is greater than 10.

**2009-2010 MAX All Provider Characteristics Validation Table**

State: MI

Produced: 02/28/2013

Measure	2009 Value	2010 Value	% Change 2009-2010	Cross Year Expected Range	Cross Year Within Range <sup>a</sup>
<b>All Providers</b>					
Number of provider IDs	289,361	266,011	-8.07	30%(+/-)	Yes
% billing provider on IP claim	0.3	0.4	48.44	N/A	N/A
% NPI billing provider on IP claim	0.1	0.2	73.60	N/A	N/A
% billing provider on LT claim	0.4	0.3	-27.45	N/A	N/A
% NPI billing provider on LT claim	0.2	0.2	13.23	N/A	N/A
% billing provider on OT claim	45.4	50.4	11.15	N/A	N/A
% servicing provider on OT claim	65.5	70.1	7.07	N/A	N/A
% NPI servicing provider on OT claim	12.3	13.0	5.36	N/A	N/A
% billing provider on RX claim	4.0	5.5	35.96	N/A	N/A
% prescribing provider on RX claim	23.8	29.4	23.75	N/A	N/A
% NPI billing provider on RX claim	1.0	3.5	249.15	N/A	N/A
% billing provider	49.6	54.6	10.10	N/A	N/A
% NPI billing provider	1.3	3.9	201.48	N/A	N/A
% servicing provider	65.5	70.1	7.07	N/A	N/A
% NPI servicing provider	12.3	13.0	5.36	N/A	N/A
% prescribing provider	23.8	29.4	23.75	N/A	N/A
% provider IDs with NPI	35.8	30.2	-15.66	30%(+/-)	Yes
% provider IDs linked to NPPES	35.5	29.6	-16.54	30%(+/-)	Yes
% provider IDs with or without NPI but linked to state provider file	0.0	0.0	Div by 0	N/A	N/A
average number of claims	830.0	936.2	12.79	30%(+/-)	Yes
average number of beneficiaries with claims	108.4	137.6	26.91	30%(+/-)	Yes
<b>Provider IDs with NPI</b>					
Number of provider IDs with NPI	103,541	80,278	-22.47	30%(+/-)	Yes
% NPI source = MSIS	94.9	89.2	-5.98	30%(+/-)	Yes
% NPI source = NPPES	5.1	10.8	111.38	30%(+/-)	No
% NPI source = state cross-reference file	0.0	0.0	Div by 0	N/A	N/A
<b>Provider IDs Linked to NPPES</b>					
Number of provider IDs linked to NPPES	102,692	78,793	-23.27	30%(+/-)	Yes
% linked via NPI	94.9	89.0	-6.15	30%(+/-)	Yes
% linked via Medicaid legacy provider ID	5.1	10.9	113.96	30%(+/-)	No
% linked via Medicare UPIN	0.0	0.1	72.73	30%(+/-)	Yes
% with name prefix	16.4	21.3	30.00	30%(+/-)	Yes
% with first name	33.2	43.9	32.34	30%(+/-)	No
% with middle name	25.3	33.8	33.61	30%(+/-)	No
% with last name	33.2	43.9	32.34	30%(+/-)	No
% with name suffix	0.8	1.0	21.16	30%(+/-)	Yes
% male	21.5	28.3	31.65	30%(+/-)	No
% female	11.7	15.6	33.62	30%(+/-)	No
% with credential	32.1	42.5	32.61	30%(+/-)	No
% with business name	66.8	55.8	-16.54	30%(+/-)	Yes
% with address line 1	100.0	99.7	-0.32	30%(+/-)	Yes
% with city	100.0	99.7	-0.32	30%(+/-)	Yes
% with state	100.0	99.7	-0.32	30%(+/-)	Yes
% state = claim file state code	85.7	79.8	-6.88	30%(+/-)	Yes
% with zip code	100.0	99.7	-0.32	30%(+/-)	Yes

Source: Medicaid Analytic eXtract (MAX) Provider Characteristics Files, 2009-2010.

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## 2009-2010 MAX All Provider Characteristics Validation Table

State: MI

Produced: 02/28/2013

Measure	2009 Value	2010 Value	% Change 2009-2010	Cross Year Expected Range	Cross Year Within Range <sup>a</sup>
% with primary taxonomy	99.1	97.9	-1.21	30%(+/-)	Yes
% with provider entity type = individual	33.2	43.9	32.34	30%(+/-)	No
% with provider entity type = organization	66.8	55.8	-16.54	30%(+/-)	Yes
<b>Provider IDs with or without NPI but linked to state provider file</b>					
Number of provider IDs with or without NPI linked to state provider file	0	0	Div by 0	N/A	N/A
<b>Provider IDs with NPPES Primary Taxonomy</b>					
Number of provider IDs with NPPES primary taxonomy	102,288	77,126	-24.60	30%(+/-)	Yes
% individual or group of individuals	63.8	69.1	8.25	30%(+/-)	Yes
% allopathic and osteopathic physicians	41.6	42.3	1.64	30%(+/-)	Yes
% behavioral health and social service providers	2.6	3.3	28.13	30%(+/-)	Yes
% chiropractic providers	1.9	3.1	62.61	30%(+/-)	Yes
% dental providers	4.7	6.2	33.60	30%(+/-)	Yes
% dietary and nutritional service providers	0.0	0.0	2.33	30%(+/-)	Yes
% emergency medical service providers	0.0	0.0	106.67	30%(+/-)	Yes
% eye and vision service providers	1.8	2.0	16.46	30%(+/-)	Yes
% nursing service providers	0.2	0.2	8.67	30%(+/-)	Yes
% nursing service-related providers	0.0	0.0	-41.18	30%(+/-)	Yes
% other service providers	0.8	2.2	170.25	30%(+/-)	Yes
% pharmacy service providers	0.2	0.2	6.70	30%(+/-)	Yes
% physician assistants and advanced practice nursing providers	5.9	6.2	3.88	30%(+/-)	Yes
% podiatric medicine and surgery service providers	1.2	1.6	35.18	30%(+/-)	Yes
% respiratory, developmental, rehabilitative, and restorative service providers	0.6	1.1	68.14	30%(+/-)	Yes
% speech, language, and hearing service providers	0.4	0.4	-9.19	30%(+/-)	Yes
% student health care	0.0	0.1	160.87	30%(+/-)	Yes
% technologists, technicians, and other technical service providers	0.0	0.0	55.00	30%(+/-)	Yes
% group of individuals with multi- or single specialty	1.7	0.0	-100.00	30%(+/-)	Yes
% nonindividuals	36.2	30.9	-14.54	30%(+/-)	Yes
% agencies	2.5	2.2	-11.61	30%(+/-)	Yes
% ambulatory health care facilities	3.1	4.8	55.94	30%(+/-)	Yes
% hospital units	0.2	0.2	-18.70	30%(+/-)	Yes
% hospitals	16.7	6.3	-62.31	30%(+/-)	No
% laboratories	0.4	0.5	26.21	30%(+/-)	Yes
% managed care organizations	0.0	0.2	278.57	30%(+/-)	Yes
% nursing and custodial care facilities	1.4	1.3	-8.73	30%(+/-)	Yes
% residential treatment facilities	0.1	0.1	138.60	30%(+/-)	Yes
% respite care facility	0.0	0.0	-60.00	30%(+/-)	Yes
% suppliers	10.6	14.2	33.45	30%(+/-)	No
% transportation services	1.1	1.1	3.99	30%(+/-)	Yes
% nonmedical	0.0	0.0	Div by 0	N/A	N/A
<b>Provider IDs with Entity Type = Individual</b>					
Number of provider IDs with entity type = individual	34,075	34,601	1.54	30%(+/-)	Yes
% a sole proprietorship	21.6	20.8	-3.78	30%(+/-)	Yes
% not a sole proprietorship	67.9	70.0	3.07	30%(+/-)	Yes
% not answered	10.5	9.2	-12.11	N/A	N/A
<b>Provider IDs with Entity Type = Organization</b>					
Number of provider IDs with entity type = organization	68,617	43,940	-35.96	30%(+/-)	No
% organization is a subpart	11.3	14.0	23.82	30%(+/-)	Yes
% organization is not a subpart	71.3	72.0	0.99	30%(+/-)	Yes
% not answered	17.4	14.0	-19.58	N/A	N/A

Source: Medicaid Analytic eXtract (MAX) Provider Characteristics Files, 2009-2010.

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