MAX
CENTERS FOR MEDICARE & MEDICAID SERVICES

MEDICAID POLICY BRIEF

MATHEMATICA Policy Research

Brief 5 • April 2012

Assessing the Usability of the MAX 2007 Inpatient and Prescription Encounter Data for Enrollees in Comprehensive Managed Care

Allison Hedley Dodd, Jessica Nysenbaum, and Ashley Zlatinov

As growing numbers of Medicaid enrollees receive health benefits through comprehensive managed care, the researchers and policymakers seeking to understand the service use of these enrollees must rely on encounter data that states receive from managed care plans. Although encounter data provide insight into the service use of comprehensive managed care enrollees, not all states report encounter data, and little is known about the data's usability. In this issue brief, we assess the availability, completeness and quality of the inpatient and prescription-drug encounter data in the Medicaid Analytical eXtract (MAX) system in order to judge the data's usability.

In 2008, 50 percent of all full-benefit Medicaid enrollees were enrolled in comprehensive managed care, an increase from 41 percent in 2004 (Borck et al. 2012). In eight states, more than 75 percent of enrollees were enrolled in comprehensive managed care in 2008 (Borck et al. 2012). As states expand their use of comprehensive managed care to provide services to their enrollees, relying on fee-for-service (FFS) data to determine the service needs of the Medicaid population is no longer sufficient. Researchers and policymakers must consider service use within the managed care population as well.

States submit data quarterly to the Medicaid Statistical Information System (MSIS) regarding Medicaid enrollee eligibility and Medicaid claims paid in each quarter of the federal fiscal year. In MSIS, claims are typically paid several months after service use, so the services do not always occur in the same quarter as the MSIS file. Seven quarters of MSIS data are linked together and processed to create the Medicaid Analytic eXtract (MAX) data system. MAX was designed to enable research on Medicaid enrollment, service utilization, and expenditures per calendar year at the enrollee level. MAX links eligibility records to claims data, enabling claims analysis by demographic characteristics or eligibility group.

About This Series

The MAX Medicaid policy issue brief series highlights the essential role MAX data can play in analyzing the Medicaid program. MAX is a set of annual, person-level data files on Medicaid eligibility, service utilization, and payments that are derived from state reporting of Medicaid eligibility and claims data into the Medicaid Statistical Information System (MSIS). MAX is an enhanced, research-friendly version of MSIS that includes final adjudicated claims based on the date of service, and data that have undergone additional quality checks and corrections. CMS produces MAX specifically for research purposes. For more information about MAX, please visit: http://www.cms.gov/MedicaidDataSourcesGenInfo/07_MAXGeneralInformation.asp.

State expenditures for comprehensive managed care enrollees are captured in the capitated payment data in MAX. Because capitated payments reflect the set fee that states pay to a managed care organization to cover an enrollee, capitation claims, unlike FFS claims, contain no information about service use. Instead, service use is captured through encounter data, which are claims records that contain utilization but no Medicaid expenditure information.

MAX has included encounter data since its inception, but until now, the data have not been examined closely. The goal of our analysis was not to validate the encounter data but rather focus on assessing their availability, completeness, and quality. To be usable, data need to be of comparable completeness and quality to FFS data. We created metrics to assess both of these factors. Because this is an initial look at the encounter data, we focused on inpatient (IP) and prescription drug (RX) data from health maintenance organization (HMO)/health insuring organization (HIO) plans. The remainder of this issue brief explains how we conducted the analysis and elaborates on the results.

Methods

We chose to use MAX data so that we could analyze the data by eligibility group. In addition, the fact that MAX data included all Medicaid information for the calendar year instead of by quarter was particularly important because some states that submit encounter data do not include it in their quarterly MSIS submissions on a regular basis (Byrd et al. 2011). We used the MAX data from 2007 because at the time of our analysis, 2007 was the most recent year with MAX data available for each state.

In MAX 2007, encounter data for comprehensive managed care enrollees were available for over half of the states in at least one type of file: IP, long-term care (LT), other (OT), or RX files (Table 1). We limited our analysis to fully capitated (comprehensive) managed care arrangement HMO/HIO plans because they cover the widest range of services and because we anticipated they would have the highest quality encounter data. We focused on IP and RX files for several reasons. According to actuaries and state Medicaid officials, encounter data for IP and RX services—provided by a relatively small number of providers—are typically easier to collect and probably more complete than OT services data, which are provided by numerous individual physicians and other providers. There were too few LT encounter claims for analysis.

To identify comprehensive managed care encounter claims, we limited our analysis to IP and RX encounter claims for people enrolled in an HMO or HIO at any time during 2007. To facilitate state-by-state comparisons, we analyzed the data by basis-of-eligibility (BOE) category: adult, children, disabled, and aged. States vary widely in terms of the mix of Medicaid populations enrolled in capitated managed care programs, so looking at the volume of encounter data submissions for all eligibility categories combined can be misleading. For example, we would expect to see a reduced number of IP and RX encounter claims in states with a higher percentage of comprehensive managed care enrollees in the aged and disabled eligibility categories. In 2007, almost all Medicaid beneficiaries age 65 and over and 39 percent of disabled enrollees had dual eligibility, and therefore would have received these services from Medicare (Rousseau et al. 2010).

We considered a state to have managed care if at least 1 percent of enrollees participated in comprehensive managed care at some point during the year. Because states with low managed care enrollment are less likely to be focused on producing high quality encounter data, we analyzed data for a particular BOE group only if 10 percent or more of full-benefit Medicaid enrollees within that group were enrolled in an HMO/HIO or Program of All-Inclusive Care for the Elderly (PACE) plan. We did not analyze data for a particular BOE group in a state if that eligibility group had fewer than 200 claims because measures based on only a small number of records could skew estimates.

Table 1. Overview of Encounter Data Available in MAX 2007 for HMO/HIO Enrollees, by File Type

File Type	Number of States with Data[a]	Number of Encounter Claims
IP	25	1,566,083
LT	18	374,538
OT	27	260,520,285
RX	18	72,436,540

Source: Mathematica's analysis of MAX 2007 data.

[a] Includes all states that submitted encounter data regardless of the level of HMO/HIO participation in the state, the number of claims submitted, or whether prescriptions were covered as part of the comprehensive managed care program.

Metrics

To be usable, data need to be both complete and of comparable quality to FFS data. We conducted our analysis in two phases to account for these two characteristics. To judge completeness, we looked at measures that assessed the volume of encounter-claims data. To evaluate quality, we used metrics that assessed the amount or quality of information on the claim itself. Because managed care coverage varies by state and type of enrollee, we evaluated the completeness and quality measures for IP and RX data separately for each BOE for each state.

To create comparison metrics, we calculated the average 2007 value and standard deviation for each completeness and quality metric for each BOE using the full-benefit FFS population across all states with substantial FFS participation. For each comparison metric, we used the average FFS value as the midpoint of our reference range. We set the top of the reference range at two standard deviations above the FFS average, and the bottom of the range at two standard deviations below the FFS average. We considered the reference range to be the acceptable range of values for the 2007 encounter data for that metric. The state's encounter data value was considered "good" if it fell within the reference range. For certain measures, state values were highly skewed but typically either close to 100 percent or 0 percent for both FFS and encounter data. Rather than use the reference range based on the average value, we defined a "good" value as 90 percent or greater for these measures. The metrics used for evaluation of completeness and quality are shown in Table 2.

For each BOE that met the analysis criteria, we compared the value to the FFS reference metric to determine if the state's value fell within the acceptable range. The number of states

Table 2. Metrics Developed to Analyze Medicaid Encounter Data in MAX 2007

	Reference Range (Number of States Meeting Metric)			
Data Element	**Adults**	**Children**	**Disabled**	**Aged**
IP				
Completeness Measures				
Average number of IP encounter claims per enrollee	0.04–0.39 (16 of 22)	0.02–0.15 (17 of 22)	0.09–0.56 (11 of 15)	0.00–0.46 (6 of 6)
Percentage of enrollees with IP encounter claims	2.65–33.25 (19 of 22)	1.96–12.97 (19 of 22)	7.09–26.57 (12 of 15)	2.90–23.76 (5 of 6)
Quality Measures				
Average length of stay	1.91–3.81 (20 of 22)	2.07–5.78 (22 of 22)	4.93–9.32 (11 of 15)	2.19–12.37 (6 of 6)
Average number of diagnosis codes	2.48–6.16 (20 of 22)	1.82–4.17 (19 of 22)	2.94–9.35 (12 of 15)	3.29–10.31 (5 of 6)
Percentage of IP claims with procedure code	53.53–100.00 (16 of 22)	19.44–74.63 (20 of 22)	29.52–71.73 (11 of 15)	26.42–73.75 (5 of 6)
Percentage of IP claims with UB accommodation codes	Values of ≥ 90% (18 of 22)	Values of ≥ 90% (18 of 22)	Values of ≥ 90% (9 of 15)	Values of ≥ 90% (2 of 6)
RX				
Completeness Measures				
Average number of RX encounter claims per enrollee	0.60–13.87 (16 of 17)	1.77–7.45 (14 of 17)	13.44–52.36 (8 of 11)	0.00–49.57 (2 of 3)
Percentage of enrollees with RX encounter claims	20.03–92.60 (17 of 17)	36.68–79.86 (17 of 17)	51.21–100.00 (10 of 11)	11.12–91.17 (3 of 3)
Quality Measures				
Percentage of RX claims with date prescribed	Values of ≥ 90% (10 of 17)	Values of ≥ 90% (10 of 17)	Values of ≥ 90% (7 of 11)	Values of ≥ 90% (1 of 3)
Percentage of RX claims with quantity	Values of ≥ 90% (16 of 17)	Values of ≥ 90% (16 of 17)	Values of ≥ 90% (11 of 11)	Values of ≥ 90% (2 of 3)

Source: Mathematica's analysis of the MAX 2007 IP and RX files.
Note: The parenthetical data show the number of states that had values within the acceptable range, out of the total number of states that had sufficient participation and encounter claims submitted for analysis.
UB = uniform billing.

that fell within the range is shown in parentheses for each measure. For the IP and the RX data, "complete" was defined as having values within the acceptable range for at least one of the two completeness metrics for that data type. For the IP data, "comparable quality" was defined as satisfying at least three of the four quality measures. For the RX data, "comparable quality" was defined as satisfying at least one of the two quality measures. A BOE within a state was considered to have "usable" data if the encounter data for that BOE met both the "complete" and "comparable quality" criteria.

Findings

IP Encounter Data

Table 3 summarizes the availability, completeness, and quality of the IP encounter data for each state by BOE. Figure 1 illustrates how the criteria applied at each step of the analysis eliminated states from meeting the usability criteria. For example, 36 states had comprehensive managed care at some point during 2007 (Table 3, Figure 1). Of these, 33 had at least 10 percent of adult enrollees participating in comprehensive managed care. Of these 33 states, 22 (67 percent) submitted IP encounter claims for adults. The completeness of the adult IP encounter data was high, with 19 of 22 states submitting complete data. The quality of the adult IP encounter data was high as well, with 20 of 22 states submitting data of comparable quality to the FFS data. Because they met the criteria for both completeness and comparable quality to the FFS data, the IP encounter data are considered usable for 17 states (77 percent) that submitted data for adults.

The majority of states that had people in comprehensive managed care submitted IP encounter data. Most of the IP claims that were submitted met the criteria for completeness and quality and were therefore considered usable. Although fewer states

Table 3. Summary of the 2007 MAX Encounter IP Claims

	State Has Comprehensive Managed Care (CMC)[a]	Percentage of CMC Enrollees Met Threshold[b]				State Submitted IP Encounter Claims[c]				IP Encounter Records Are Complete[d]				IP Encounter Records Are of Comparable Quality to FFS Data[e]				IP Encounter Data Are Usable for Research[f]			
		A	C	D	E	A	C	D	E	A	C	D	E	A	C	D	E	A	C	D	E
Alabama	X																				
Alaska																					
Arizona	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Arkansas																					
California	X	X	X	X	X	X	X	X	X	X		X	X	X	X			X			
Colorado	X	X	X	X	X																
Connecticut	X	X	X																		
Delaware	X	X	X	X		X	X							X	X						
District of Columbia	X	X	X	X																	
Florida	X	X	X	X	X																
Georgia	X	X	X																		
Hawaii	X	X	X	X		X	X	X		X	X	X		X	X	X		X	X	X	
Idaho																					
Illinois	X																				
Indiana	X	X	X	X		X	X	X		X	X	X		X	X	X		X	X	X	
Iowa	X																				
Kansas	X	X	X			X	X			X	X			X	X			X	X		
Kentucky	X	X	X	X		X	X	X		X	X	X		X	X	X		X	X	X	
Louisiana																					
Maine																					
Maryland	X	X	X	X		X	X	X		X	X	X		X	X			X	X		
Massachusetts	X	X	X	X																	
Michigan	X	X	X	X		X	X	X						X	X						
Minnesota	X	X	X		X	X	X		X	X	X		X	X	X		X	X	X		X
Mississippi																					
Missouri	X	X	X			X	X			X	X			X	X			X	X		
Montana																					
Nebraska	X	X	X			X	X			X	X			X	X			X	X		
Nevada	X	X	X																		
New Hampshire																					
New Jersey	X	X	X	X		X	X	X		X	X	X		X	X	X		X	X	X	
New Mexico	X	X	X	X		X	X	X		X	X	X		X	X	X		X	X	X	
New York	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X	X	X
North Carolina																					
North Dakota																					
Ohio	X	X	X	X																	
Oklahoma																					
Oregon	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Pennsylvania	X	X	X	X																	

(continued)

Table 3. Summary of the 2007 MAX Encounter IP Claims *(continued)*

	State Has Comprehensive Managed Care (CMC)[a]	Percentage of CMC Enrollees Met Threshold[b]				State Submitted IP Encounter Claims[c]				IP Encounter Records Are Complete[d]				IP Encounter Records Are of Comparable Quality to FFS Data[e]				IP Encounter Data Are Usable for Research[f]			
		A	C	D	E	A	C	D	E	A	C	D	E	A	C	D	E	A	C	D	E
Rhode Island	X	X	X	X		X	X	X		X	X	X									
South Carolina	X	X	X																		
South Dakota																					
Tennessee	X	X	X	X	X	X	X	X		X	X			X	X	X		X	X		
Texas	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X		X		X
Utah																					
Vermont																					
Virginia	X	X	X	X		X	X	X		X	X	X		X	X			X	X		
Washington	X	X	X			X	X			X	X			X	X			X	X		
West Virginia	X	X	X																		
Wisconsin	X	X	X			X	X			X	X			X	X			X	X		
Wyoming																					
Total	**36**	**33**	**33**	**22**	**9**	**22**	**22**	**15**	**6**	**19**	**19**	**12**	**6**	**20**	**21**	**10**	**5**	**17**	**18**	**8**	**5**

Source: Mathematica's analysis of the MAX 2007 PS and IP files.
Note: A=Adults, C=Children, D=Disabled, E=Aged.
[a] At least 1 percent of enrollees participated in HMO/HIO/PACE at some point during 2007.
[b] At least 10 percent of enrollees in the BOE participated in HMO/HIO/PACE at some point during the year.
[c] In addition to having at least 10 percent HMO/HIO/PACE participation, the state submitted at least 200 encounter claims for the BOE.
[d] The BOE-specific metric was met for at least one of the two completeness measures: (1) percentage of enrollees with IP encounter claims and (2) average number of IP encounter claims per enrollee.
[e] The BOE-specific metric was met for at least three of the four quality measures: average length of stay, average number of diagnosis codes, percentage of IP claims with procedure code, and percentage of IP claims with uniform billing (UB) accommodation codes.
[f] Both the completeness and quality standards were met for the BOE.

met the comprehensive managed care participation and IP encounter claim submission threshold for analysis for disabled and aged enrollees, the completeness and the quality of the IP encounter data submitted were comparable to that of adults and children. The IP encounter data were considered usable for at least one BOE category for 19 (86 percent) of the 22 states that submitted these data. Thirteen states (59 percent) provided usable data for all of the BOE groups that had submitted data (Arizona, Hawaii, Indiana, Kansas, Kentucky, Minnesota, Missouri, Nebraska, New Jersey, New Mexico, Oregon, Washington, and Wisconsin) (Table 3). Only 3 states (14 percent) did not meet the criteria for usability for any BOE. The remaining 6 states met the criteria for some BOEs but not others.

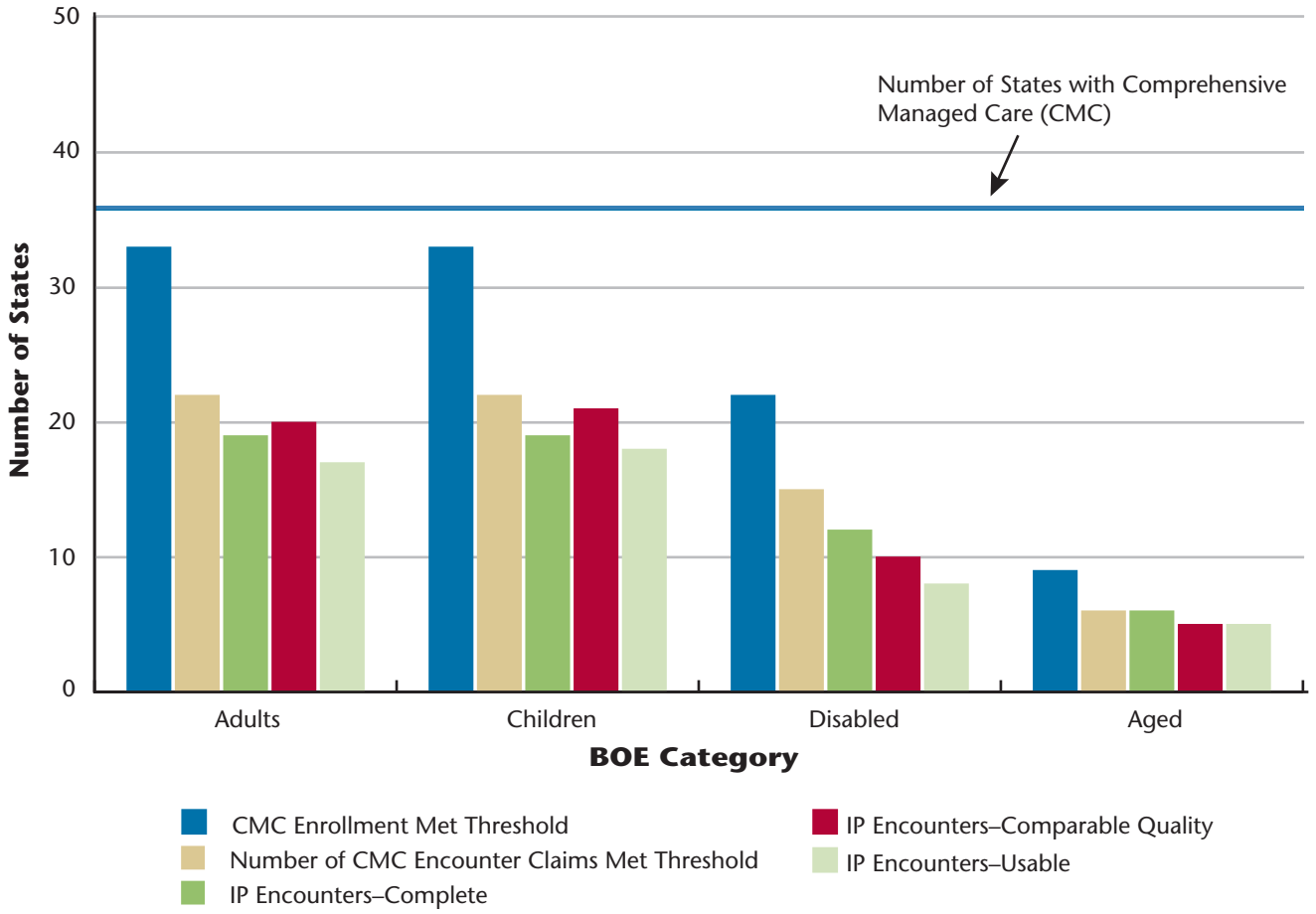
RX Encounter Data

Among the 36 states that had at least one percent of enrollees participating in comprehensive managed care, only 28 included prescription drug coverage in the comprehensive managed care benefit package (Table 4, Figure 2). Among these states, the participation in comprehensive managed care and the RX encounter data submission by BOE category was similar to that of the IP files. For the vast majority, the states that submitted IP encounter data also submitted RX data. The exceptions were Oregon, which submitted IP but no RX encounter data, and Georgia, which submitted RX but no IP encounter data.

Of the 27 states that had at least 10 percent participation by at least one BOE group in a comprehensive managed care program that included prescription drug coverage, 17 (63 percent) submitted RX encounter data. Every state that submitted RX encounter data for adults, children, or the aged submitted complete data (Table 4). One state (New Jersey) met the completeness criteria for adults and children but not the disabled. The quality of the RX encounter data was high as well.

For 16 (94 percent) of the 17 states that submitted RX encounter data, the data were considered usable for at least one BOE. Fifteen states (88 percent) provided usable data for all of the BOE groups that had submitted data (Arizona, California, Georgia, Hawaii, Indiana, Kansas, Kentucky, Maryland, Michigan,

Figure 1. Summary of the MAX 2007 IP Encounter Claims by BOE[a]



[a] See Table 3 footnotes for data category definitions.

Missouri, New Mexico, Rhode Island, Virginia, Washington, and Wisconsin) (Table 4). Only one state (Minnesota) submitted RX encounter data that did not meet the usability criteria for any BOE.

Most states that included prescriptions in their comprehensive managed care plans and submitted both IP and RX encounter data met the criteria for usability for all of the BOE groups that had submitted data. A few states met the criteria for usability for the BOEs submitted in one type of encounter data but not the other. The IP encounter data from Minnesota met the criteria for usability for the BOEs submitted, but the RX data did not due to missing date prescribed and quantity on a large proportion of claims. Rhode Island met the criteria for usability for the BOEs with RX encounter data but not for any BOE with IP encounter data due to a low number of average diagnosis codes and claims with UB accommodation codes.

Caveats

Because FFS data are not without issues, we did not require a state's encounter data to meet all completeness and quality measures in order to be considered usable. If we had, the number of states with usable IP or RX data for at least one BOE would have dropped greatly. Among the 33 states with comprehensive managed care participation of 10 percent or more for at least one BOE, the number of states with usable data for research on IP encounters would fall from 19 (58 percent) to 13 (39 percent) if all criteria for completeness and quality had to be met. Among the 27 states having at least one BOE group with at least 10 percent participation in comprehensive managed care with prescription drug coverage, the number of states with usable data for research on RX encounters would fall from 16 (59 percent) to 10 (37 percent).

In this brief, we used selected FFS-based metrics to make a preliminary judgment about the quality and completeness of the

Table 4. Summary of the 2007 MAX Encounter RX Claims

	State Has Comprehensive Managed Care (CMC)[a]	Percentage of CMC Enrollees Met Threshold[b]				State Submitted RX Encounter Claims[c]				RX Encounter Records Are Complete[d]				RX Encounter Records Are of Comparable Quality to FFS Data[e]				RX Encounter Data Are Usable for Research[f]			
		A	C	D	E	A	C	D	E	A	C	D	E	A	C	D	E	A	C	D	E
Alabama	X																				
Alaska																					
Arizona	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Arkansas																					
California	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Colorado	X	X	X	X	X																
Connecticut	X	X	X																		
Delaware																					
District of Columbia	X	X	X	X																	
Florida	X	X	X	X	X																
Georgia	X	X	X			X	X			X	X			X	X			X	X		
Hawaii	X	X	X	X		X	X	X		X	X	X		X	X	X		X	X	X	
Idaho																					
Illinois																					
Indiana	X	X	X	X		X	X	X		X	X	X		X	X	X		X	X	X	
Iowa																					
Kansas	X	X	X			X	X			X	X			X	X			X	X		
Kentucky	X	X	X	X		X	X	X		X	X	X		X	X	X		X	X	X	
Louisiana																					
Maine																					
Maryland	X	X	X	X		X	X	X		X	X	X		X	X	X		X	X	X	
Massachusetts	X	X	X	X																	
Michigan	X	X	X	X		X	X	X		X	X	X		X	X	X		X	X	X	
Minnesota	X	X	X		X	X	X		X	X	X		X								
Mississippi																					
Missouri	X	X	X			X	X			X	X			X	X			X	X		
Montana																					
Nebraska																					
Nevada	X	X	X																		
New Hampshire																					
New Jersey	X	X	X	X		X	X	X		X	X			X	X	X		X	X		
New Mexico	X	X	X	X		X	X	X		X	X	X		X	X	X		X	X	X	
New York	[g]																				
North Carolina																					
North Dakota																					
Ohio	X	X	X	X																	
Oklahoma																					
Oregon	X	X	X	X	X																
Pennsylvania	X	X	X	X																	

(continued)

Table 4. Summary of the 2007 MAX Encounter RX Claims *(continued)*

	State Has Comprehensive Managed Care (CMC)[a]	Percentage of CMC Enrollees Met Threshold[b]				State Submitted RX Encounter Claims[c]				RX Encounter Records Are Complete[d]				RX Encounter Records Are of Comparable Quality to FFS Data[e]				RX Encounter Data Are Usable for Research[f]			
		A	C	D	E	A	C	D	E	A	C	D	E	A	C	D	E	A	C	D	E
Rhode Island	X	X	X	X		X	X	X		X	X	X		X	X	X		X	X	X	
South Carolina	X	X	X																		
South Dakota																					
Tennessee																					
Texas																					
Utah																					
Vermont																					
Virginia	X	X	X	X		X	X	X		X	X	X		X	X	X		X	X	X	
Washington	X	X	X			X	X			X	X			X	X			X	X		
West Virginia																					
Wisconsin	X	X	X			X	X			X	X			X	X			X	X		
Wyoming																					
Total	**28**	**27**	**27**	**18**	**6**	**17**	**17**	**11**	**3**	**17**	**17**	**10**	**3**	**16**	**16**	**11**	**2**	**16**	**16**	**10**	**2**

Source: Mathematica's analysis of the MAX 2007 PS and RX files.
Note: A=Adults, C=Children, D=Disabled, E=Aged.
[a] At least 1 percent of enrollees participated in HMO/HIO/PACE at some point during 2007. Eight states (Delaware, Illinois, Iowa, Nebraska, New York, Tennessee, Texas, and West Virginia) had comprehensive managed care but did not include prescription drugs in the HMO benefit package during 2007 (CMS 2011).
[b] At least 10 percent of enrollees in the BOE participated in HMO/HIO/PACE at some point during the year.
[c] In addition to having at least 10 percent HMO/HIO/PACE participation, the state submitted at least 200 encounter claims for the BOE.
[d] The BOE-specific metric was met for at least one of the two completeness measures: (1) percentage of enrollees with RX encounter claims and (2) average number of RX encounter claims per enrollee.
[e] The BOE-specific metric was met for at least one of the two quality measures: (1) percentage of RX claims with date prescribed and (2) percentage of RX claims with quantity.
[f] Both the completeness and quality standards were met for the BOE.
[g] New York submitted RX encounter data even though prescription drugs were not included in the HMO benefit package.

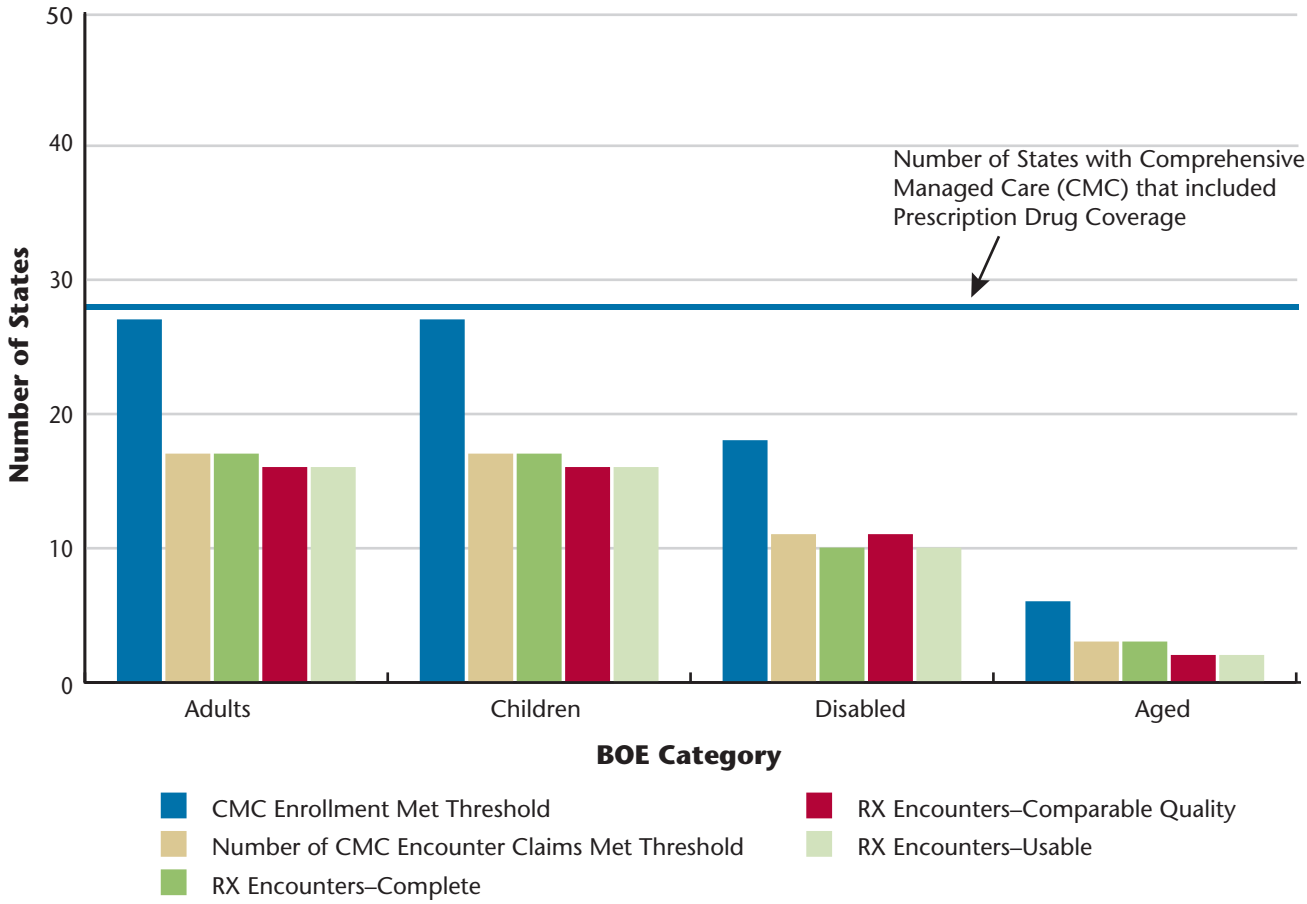
data for inpatient hospitalizations and prescription medication. This approach has been useful because it illustrates that there is a reasonable quantity of encounter data in MAX and that on basic measures the data appear to be of good quality. We assume that, like the FFS data, the MAX data that fall within acceptable ranges accurately depict what is happening in the state. However, this analysis has the limitation that it assumes FFS data provide a reasonable benchmark for judging the encounter data. While populations receiving services through comprehensive managed care plans are likely to differ from FFS populations in important ways, the metrics used in the assessment of the data were relatively broad to account for differences in utilization patterns that may reflect differences in populations or inherent differences between the FFS and managed care delivery systems.

Conclusions

This brief provides an assessment of the encounter data included in the MAX 2007 data files. The results are encouraging—most states that have comprehensive managed care plans are reporting IP and RX encounter data. Of those data, the majority are complete and of comparable quality to the FFS data.

This analysis will aid researchers in determining which states with notable comprehensive managed care enrollment may be reasonable to analyze. Researchers should consider the prevalence of managed care and the usability of the encounter data in determining the data available for analysis. In states with less than 10 percent of enrollees in comprehensive managed care, FFS data would likely be sufficient for analysis. For states with more than 10 percent of enrollees in comprehensive managed care, researchers may use a combination of FFS and encounter data, depending on the prevalence of comprehensive managed care. For example, if researchers wanted to study prescription drug use among children, they would rely on FFS data for the 24 states with less than 10 percent of enrollees in comprehensive managed care and a combination of FFS and encounter data for the 16 states that submitted usable RX encounter data

Figure 2. Summary of the MAX 2007 RX Encounter Claims by BOE[a]



[a] See Table 4 footnotes for data category definitions.

for children. Thus 40 states appear to have either the FFS or encounter data necessary to conduct thorough research on prescription drug use among child enrollees. By including encounter data for states with substantial enrollment in comprehensive managed care and not relying solely on utilization among FFS enrollees, researchers and policymakers will have a more complete picture of service utilization among Medicaid enrollees.

REFERENCES

Borck, Rosemary, Allison Hedley Dodd, Ashley Zlatinov, Shinu Verghese, Rosalie Malsberger, and Cara Petroski. "The Medicaid Analytic eXtract 2008 Chartbook." Washington, DC: Centers for Medicare and Medicaid Services. 2012.

Byrd, V., J. Verdier, J. Nysenbaum, and A. Schoettle. "Technical Assistance for Medicaid Managed Care Encounter Reporting to the Medicaid Statistical Information System, 2010." Washington, DC: Mathematica Policy Research. Final Report submitted to CMS, February 28, 2011.

CMS (Centers for Medicare and Medicaid Services). "Prescription Drug Tables for All Beneficiaries in 2007." Available at [https://www.cms.gov/MedicaidDataSourcesGenInfo/downloads/2007AllBenes_US.pdf]. Accessed October 17, 2011.

Rousseau, D., L. Clemans-Cope, E. Lawton, J. Langston, J. Connolly, and J. Howard. "Dual Eligibles: Medicaid Enrollment and Spending for Medicare Beneficiaries in 2007." Washington, DC: Kaiser Commission on Medicaid and the Uninsured, December 2010.

For further information on this issue brief series, visit our website at www.mathematica-mpr.com

Princeton, NJ • Ann Arbor, MI • Cambridge, MA • Chicago, IL • Oakland, CA • Washington, DC