

## Recommended Change to Coding Diagnoses for Chapters 15 and 16 of the State Medical Facilities Plan

**Recommendation:** Healthcare Planning recommends implementation of the use of Major Diagnostic Category (MDC) codes to identify days of care in acute care hospitals for psychiatric and substance use disorder treatment.

**Background:** For the 2016 reporting year, Truven began using ICD-10 codes to identify days of care for psychiatric and/or substance use disorder treatment. In the past, the data contained ICD-9 codes. Currently, Sheps selects psychiatric and substance use disorder discharge (and days of care) data based on specific ICD-10 codes. While it is possible to map ICD-9 to ICD-10 codes in general, the codes do not necessarily map perfectly. In addition, the process is quite onerous and error-prone.

The Truven data also contains Major Diagnosis Categories (MDC) created by the Centers for Medicare and Medicaid Services (CMS). CMS created MDC codes by grouping all possible principal diagnoses from ICD-9-CM into 25 mutually exclusive categories and recently mapped these to ICD-10.

The pertinent MDC codes are:

- MDC 19 Mental Diseases & Disorders – Chapter 15
- MDC 20 Alcohol/Drug Use or Induced Mental Disorders – Chapter 16

For comparison to the ICD-9 data used in the 2017 SMFP (FY2015 reporting year), Sheps retrieved the data for this time period using the two MDC codes listed above. Table 1 summarizes the differences between the two data sources. Tables 2 and 3 present a detailed comparison.

**Table 1. Summary of Differences between ICD-9 and MDC Codes, 2017 SMFP Data from Truven Health Analytics (FY2015 reporting year)**

	Total Days of Care		Difference: ICD-9 minus MDC	
	ICD-9	MDC	Days of Care	%
<b>Psychiatric</b>				
<b>Child/Adolescent</b>	70,075	70,239	-164	-0.23%
<b>Adult</b>	376,625	377,226	-601	0.16%
<b>Substance Use Disorder</b>				
<b>Child/Adolescent</b>	307	307	0	0.00%
<b>Adult</b>	62,255	62,200	55	0.09%

In the 2017 SMFP, using MDC versus ICD-9 codes would have resulted in a small change in needs for child/adolescent psychiatric beds in two LME-MCOs. The 35-bed need for Eastpointe would have increased to 36 beds; the 2-bed need in Partners Behavioral Health Management would have decreased to 1 bed. The use of MDC codes would not have changed psychiatric or substance use disorder bed need in any other LME-MCOs or for any other age groups.

**Table 2: Psychiatric Inpatient Days of Care**

<b>PATIENT COUNTY</b>	<b>MDC PSYCH 0-17 YEARS</b>	<b>ICD-9 PSYCH 0-17 YEARS</b>	<b>DOC Difference 0-17 (ICD_9 - MDC)</b>	<b>% Difference 0-17</b>	<b>MDC PSYCH 18 YEARS PLUS</b>	<b>ICD_9 PSYCH 18 YEARS PLUS</b>	<b>DOC Difference 18+ (ICD-9 - MDC)</b>	<b>% Difference 18+</b>
Alamance	1,772	1,768	-4	0.23%	5,699	5,689	-10	0.18%
Alexander	135	135	0	0.00%	1,398	1,398	0	0.00%
Alleghany	83	86	3	3.61%	197	197	0	0.00%
Anson	32	32	0	0.00%	1,508	1,503	-5	0.33%
Ashe	78	78	0	0.00%	628	628	0	0.00%
Avery	145	145	0	0.00%	642	637	-5	0.78%
Beaufort	242	242	0	0.00%	2,919	2,903	-16	0.55%
Bertie	73	73	0	0.00%	1,072	1,047	-25	2.33%
Bladen	93	93	0	0.00%	904	904	0	0.00%
Brunswick	525	523	-2	0.38%	3,751	3,753	2	0.05%
Buncombe	2,156	2,145	-11	0.51%	18,126	18,119	-7	0.04%
Burke	481	478	-3	0.62%	5,804	5,781	-23	0.40%
Cabarrus	1,317	1,320	3	0.23%	6,037	5,983	-54	0.89%
Caldwell	280	280	0	0.00%	3,438	3,440	2	0.06%
Camden	48	48	0	0.00%	184	168	-16	8.70%
Carteret	578	578	0	0.00%	2,218	2,225	7	0.32%
Caswell	105	105	0	0.00%	572	567	-5	0.87%
Catawba	653	648	-5	0.77%	8,040	8,041	1	0.01%
Chatham	273	273	0	0.00%	1,444	1,438	-6	0.42%
Cherokee	174	174	0	0.00%	1,099	1,099	0	0.00%
Chowan	51	51	0	0.00%	544	544	0	0.00%
Clay	21	21	0	0.00%	223	223	0	0.00%
Cleveland	619	590	-29	4.68%	3,007	2,988	-19	0.63%
Columbus	163	163	0	0.00%	1,512	1,512	0	0.00%
Craven	870	872	2	0.23%	5,316	5,319	3	0.06%
Cumberland	2,384	2,385	1	0.04%	8,356	8,385	29	0.35%
Currituck	58	58	0	0.00%	504	509	5	0.99%
Dare	164	164	0	0.00%	753	753	0	0.00%
Davidson	1,108	1,105	-3	0.27%	4,633	4,635	2	0.04%
Davie	252	252	0	0.00%	1,289	1,281	-8	0.62%
Duplin	409	404	-5	1.22%	3,130	3,107	-23	0.73%

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<b>PATIENT COUNTY</b>	<b>MDC PSYCH 0-17 YEARS</b>	<b>ICD-9 PSYCH 0-17 YEARS</b>	<b>DOC Difference 0-17 (ICD_9 - MDC)</b>	<b>% Difference 0-17</b>	<b>MDC PSYCH 18 YEARS PLUS</b>	<b>ICD_9 PSYCH 18 YEARS PLUS</b>	<b>DOC Difference 18+ (ICD-9 - MDC)</b>	<b>% Difference 18+</b>
Durham	1,920	1,920	0	0.00%	9,173	9,168	-5	0.05%
Edgecombe	287	287	0	0.00%	4,599	4,602	3	0.07%
Forsyth	3,095	3,087	-8	0.26%	15,052	15,063	11	0.07%
Franklin	558	558	0	0.00%	2,229	2,216	-13	0.58%
Gaston	1,849	1,849	0	0.00%	7,805	7,742	-63	0.81%
Gates	0	0			311	311	0	0.00%
Graham	33	33	0	0.00%	414	414	0	0.00%
Granville	484	439	-45	-9.30%	1,575	1,580	5	0.32%
Greene	38	38	0	0.00%	459	459	0	0.00%
Guilford	3,632	3,635	3	0.08%	17,597	17,581	-16	0.09%
Halifax	289	289	0	0.00%	6,090	6,090	0	0.00%
Harnett	1,089	1,094	5	0.46%	2,871	2,867	-4	0.14%
Haywood	394	394	0	0.00%	3,546	3,546	0	0.00%
Henderson	482	482	0	0.00%	5,913	5,913	0	0.00%
Hertford	25	25	0	0.00%	1,274	1,265	-9	0.71%
Hoke	469	469	0	0.00%	934	934	0	0.00%
Hyde	39	39	0	0.00%	141	141	0	0.00%
Iredell	795	790	-5	-0.63%	6,607	6,603	-4	0.06%
Jackson	122	122	0	0.00%	1,622	1,622	0	0.00%
Johnston	1,515	1,515	0	0.00%	5,603	5,615	12	0.21%
Jones	155	155	0	0.00%	355	355	0	0.00%
Lee	558	558	0	0.00%	1,729	1,728	-1	0.06%
Lenoir	311	312	1	0.32%	2,932	2,926	-6	0.20%
Lincoln	476	457	-19	-3.99%	2,889	2,885	-4	0.14%
Macon	267	267	0	0.00%	1,051	1,051	0	0.00%
Madison	291	291	0	0.00%	918	918	0	0.00%
Martin	76	76	0	0.00%	1,080	1,070	-10	0.93%
McDowell	302	302	0	0.00%	2,903	2,903	0	0.00%
Mecklenburg	7,344	7,338	-6	-0.08%	33,678	33,594	-84	0.25%
Mitchell	21	21	0	0.00%	496	496	0	0.00%
Montgomery	98	98	0	0.00%	817	817	0	0.00%

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Moore	440	440	0	0.00%	2,644	2,640	-4	0.15%
Nash	576	576	0	0.00%	5,122	5,126	4	0.08%
New Hanover	1,472	1,469	-3	-0.20%	10,503	10,541	38	0.36%
Northampton	84	84	0	0.00%	1,249	1,249	0	0.00%
Onslow	2,172	2,161	-11	-0.51%	3,598	3,554	-44	1.22%
Orange	2,048	2,048	0	0.00%	5,501	5,494	-7	0.13%
Pamlico	59	59	0	0.00%	445	445	0	0.00%
Pasquotank	331	331	0	0.00%	1,335	1,335	0	0.00%
Pender	280	281	1	0.36%	1,452	1,451	-1	0.07%
Perquimans	37	37	0	0.00%	581	576	-5	0.86%
Person	190	186	-4	-2.11%	1,071	1,069	-2	0.19%
Pitt	741	741	0	0.00%	8,654	8,652	-2	0.02%
Polk	19	19	0	0.00%	596	594	-2	0.34%
Randolph	861	834	-27	-3.14%	4,606	4,601	-5	0.11%
Richmond	250	250	0	0.00%	1,996	1,994	-2	0.10%
Robeson	530	530	0	0.00%	5,601	5,536	-65	1.16%
Rockingham	450	450	0	0.00%	2,590	2,582	-8	0.31%
Rowan	1,051	1,047	-4	-0.38%	5,445	5,290	-155	2.85%
Rutherford	180	180	0	0.00%	3,577	3,576	-1	0.03%
Sampson	263	263	0	0.00%	2,288	2,288	0	0.00%
Scotland	193	193	0	0.00%	1,148	1,154	6	0.52%
Stanly	374	369	-5	-1.34%	3,128	3,122	-6	0.19%
Stokes	219	219	0	0.00%	1,426	1,432	6	0.42%
Surry	352	360	8	2.27%	1,993	1,998	5	0.25%
Swain	237	237	0	0.00%	877	877	0	0.00%
Transylvania	168	168	0	0.00%	1,507	1,507	0	0.00%
Tyrrell	30	30	0	0.00%	30	30	0	0.00%
Union	1,618	1,624	6	0.37%	4,493	4,493	0	0.00%
Vance	246	246	0	0.00%	1,497	1,490	-7	0.47%
Wake	10,716	10,703	-13	-0.12%	39,929	39,930	1	0.00%
Warren	66	66	0	0.00%	649	649	0	0.00%

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<b>PATIENT COUNTY</b>	<b>MDC PSYCH 0-17 YEARS</b>	<b>ICD-9 PSYCH 0-17 YEARS</b>	<b>DOC Difference 0-17 (ICD_9 - MDC)</b>	<b>% Difference 0-17</b>	<b>MDC PSYCH 18 YEARS PLUS</b>	<b>ICD_9 PSYCH 18 YEARS PLUS</b>	<b>DOC Difference 18+ (ICD-9 - MDC)</b>	<b>% Difference 18+</b>
Washington	31	31	0	0.00%	527	523	-4	0.76%
Watauga	104	104	0	0.00%	1,322	1,314	-8	0.61%
Wayne	499	519	20	4.01%	5,047	5,047	0	0.00%
Wilkes	208	206	-2	-0.96%	1,618	1,619	1	0.06%
Wilson	407	407	0	0.00%	3,428	3,418	-10	0.29%
Yadkin	189	186	-3	-1.59%	1,494	1,493	-1	0.07%
Yancey	192	192	0	0.00%	649	685	36	5.55%
<b>TOTAL</b>	<b>70,239</b>	<b>70,075</b>	<b>-164</b>	<b>-0.23%</b>	<b>377,226</b>	<b>376,625</b>	<b>-601</b>	<b>0.16%</b>

Source: Truven Health Analytics, 2015 days of care in acute care hospitals

**Table 3: Substance Use Disorder Days of Care**

<b>PATIENT COUNTY</b>	<b>MDC SUB. ABUSE 0-17 YEARS</b>	<b>SUB. ABUSE 0-17 YEARS</b>	<b>DOC Difference 0-17</b>	<b>% Difference 0-17</b>	<b>MDC SUB. ABUSE 18 YEARS</b>	<b>ICD-9 SUB. ABUSE 18 YEARS</b>	<b>DOC Difference 18+</b>	<b>% Difference 18+</b>
Alamance	37	37	0	0%	985	987	2	0.20%
Alexander	0	0			333	333		
Alleghany	0	0			32	32		
Anson	0	0			94	94		
Ashe	0	0			210	210		
Avery	0	0			156	156		
Beaufort	0	0			676	676		
Bertie	0	0			31	31		
Bladen	6	6	0	0%	166	166	0	0.00%
Brunswick	2	2	0	0%	283	283	0	0.00%
Buncombe	15	15	0	0%	2,236	2,236	0	0.00%
Burke	6	6	0	0%	1,451	1,451	0	0.00%
Cabarrus	0	0			994	994		
Caldwell	26	26	0	0%	1,028	1,028	0	0.00%
Camden	0	0			30	30		
Carteret	0	0			176	176		
Caswell	0	0			64	64		
Catawba	7	7	0	0%	2,866	2,866	0	0.00%
Chatham	6	6	0	0%	277	277	0	0.00%
Cherokee	0	0			172	172		
Chowan	0	0			103	103		
Clay	0	0			81	81		
Cleveland	0	0			589	589		
Columbus	0	0			176	176		
Craven	0	0			796	798	2	0.25%
Cumberland	4	4	0	0%	877	877	0	0.00%
Currituck	0	0			46	46		
Dare	0	0			147	147		
Davidson	2	2	0	0%	684	695	11	1.61%
Davie	0	0			205	205		
Duplin	0	0			75	75		

**Table 3: Substance Use Disorder Days of Care**

<b>PATIENT COUNTY</b>	<b>MDC SUB. ABUSE 0-17 YEARS</b>	<b>SUB. ABUSE 0-17 YEARS</b>	<b>DOC Difference 0-17</b>	<b>% Difference 0-17</b>	<b>MDC SUB. ABUSE 18 YEARS</b>	<b>ICD-9 SUB. ABUSE 18 YEARS</b>	<b>DOC Difference 18+</b>	<b>% Difference 18+</b>
Durham	0	0			1,740	1,740		
Edgecombe	0	0			628	634	6	0.96%
Forsyth	28	28	0	0%	2,452	2,452	0	0.00%
Franklin	0	0			205	205		
Gaston	12	12	0	0%	1,548	1,548	0	0.00%
Gates	0	0			0	0		
Graham	0	0			48	48		
Granville	0	0			241	247	6	2.49%
Greene	0	0			87	87		
Guilford	15	15	0	0%	4,351	4,351	0	0.00%
Halifax	1	1	0	0%	223	223	0	0.00%
Harnett	0	0			512	512		
Haywood	0	0			406	406		
Henderson	0	0			1,531	1,531		
Hertford	0	0			42	42		
Hoke	0	0			147	147		
Hyde	0	0			47	47		
Iredell	0	0			808	808		
Jackson	0	0			234	234		
Johnston	1	1	0	0%	577	577	0	0.00%
Jones	0	0			13	13		
Lee	5	5	0	0%	499	527	28	5.61%
Lenoir	2	2	0	0%	220	220	0	0.00%
Lincoln	0	0			531	531		
Macon	0	0			146	146		
Madison	0	0			109	109		
Martin	0	0			161	161		
McDowell	0	0			410	410		
Mecklenburg	44	44	0	0%	5,375	5,375	0	0.00%
Mitchell	0	0			98	98		
Montgomery	0	0			193	193		

**Table 3: Substance Use Disorder Days of Care**

<b>PATIENT COUNTY</b>	<b>MDC SUB. ABUSE 0-17 YEARS</b>	<b>SUB. ABUSE 0-17 YEARS</b>	<b>DOC Difference 0-17</b>	<b>% Difference 0-17</b>	<b>MDC SUB. ABUSE 18 YEARS</b>	<b>ICD-9 SUB. ABUSE 18 YEARS</b>	<b>DOC Difference 18+</b>	<b>% Difference 18+</b>
Moore	0	0			935	935		
Nash	0	0			1,216	1,216		
New Hanover	0	0			1,246	1,246		
Northampton	0	0			61	61		
Onslow	10	10	0	0%	2,143	2,143	0	0.00%
Orange	23	23	0	0%	1,084	1,084	0	0.00%
Pamlico	0	0			6	6		
Pasquotank	0	0			115	115		
Pender	0	0			177	177		
Perquimans	0	0			25	25		
Person	0	0			168	168		
Pitt	0	0			802	802		
Polk	0	0			187	187		
Randolph	0	0			806	806		
Richmond	0	0			546	546		
Robeson	3	3	0	0%	1,481	1,481	0	0.00%
Rockingham	0	0			746	746		
Rowan	10	10	0	0%	704	704	0	0.00%
Rutherford	0	0			377	377		
Sampson	0	0			133	133		
Scotland	0	0			143	143		
Stanly	0	0			164	164		
Stokes	0	0			213	213		
Surry	0	0			414	414		
Swain	0	0			159	159		
Transylvania	0	0			330	330		
Tyrrell	0	0			4	4		
Union	8	8	0	0%	814	814	0	0.00%
Vance	0	0			129	129		
Wake	34	34	0	0%	5,639	5,639	0	0.00%
Warren	0	0			18	18		



**Table 3: Substance Use Disorder Days of Care**

<b>PATIENT COUNTY</b>	<b>MDC SUB. ABUSE 0-17 YEARS</b>	<b>SUB. ABUSE 0-17 YEARS</b>	<b>DOC Difference 0-17</b>	<b>% Difference 0-17</b>	<b>MDC SUB. ABUSE 18 YEARS</b>	<b>ICD-9 SUB. ABUSE 18 YEARS</b>	<b>DOC Difference 18+</b>	<b>% Difference 18+</b>
Washington	0	0			45	45		
Watauga	0	0			249	249		
Wayne	0	0			224	224		
Wilkes	0	0			474	474		
Wilson	0	0			385	385		
Yadkin	0	0			109	109		
Yancey	0	0			108	108		
<b>TOTAL</b>	<b>307</b>	<b>307</b>	<b>0</b>	<b>0%</b>	<b>62,200</b>	<b>62,255</b>	<b>55</b>	<b>0.09%</b>

Source: Truven Health Analytics, 2015 days of care in acute care hospitals