

Acute Care Hospital Bed Need and Limited Access Areas 2018 Update

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Summary

This report provides updated results for the Acute Care Hospital Bed Need and Limited Access Areas (LAAs). An increasing trend in patient days over prior years is noted. The LAA map is similar to past implementations. Tables and figures contained within this report are also provided in separate files.

Determination of Needed Hospital Bed Supply

The planning year used for the updated bed need is 2021, five years from the most recent MIDB data (2016). The output of the methodology is found in Table 1. In this analysis, the most recent hospital beds inventory (Dept Inv 2018) is compared to the predicted number of beds needs in 2021. The difference between the actual utilization in 2016 and the predicted utilization in 2021 is also included in Table 1. In 16 of the 33 Hospital Groups, the predicted bed need in 2021 is less than current utilization (2016). In 13 Hospital Groups, the predicted bed need in 2021 was less than current utilization, and in four Hospital Groups, it was the same as the current utilization.

The predicted statewide bed need for 2021 is 18,718 beds, which is slightly more than 2,000 beds greater than the previous estimate (bed need for 2019, calculated in 2016). The rise is attributed to large increases in acute care hospitalization occurring in 2015 and 2016. Figure 1 shows the patient day utilization from 2000 to 2016 and clearly shows the substantial increase in the last two years since the last bed update (which used 2010-2014 data). In the county-level patient day prediction phase of the Bed Need Methodology, 15 out of 84 county units (83 counties plus one “out-of-state” unit) demonstrated a significant positive linear trend in patient day utilization. Only nine counties had a negative linear trend in patient day utilization. No significant linear trend was detected in 60 counties. Despite these increases, all Hospital Groups will continue to have excess hospital beds given the large number of currently licensed beds and the state, overall, is expected to have 6,775 excess beds.

Limited Access Areas

Figure 2 provides the map of the Limited Access Areas. The bed need for each LAA can be found in Table 2, while the zip codes associated with each LAA are listed in Table 3. Based on 2016 hospitalization data, the minimum number of predicted patient days for an underserved area to be considered an LAA was 26,851. This value was calculated using the overall state rate of 0.537 patient days per person and a minimum population of 50,000, per the Review Standards.

Six LAAs were identified in the 2018 update, an increase from the five identified in the 2016 update. LAAs 1, 2, 3, and 5 are nearly identical to the LAAs 1-3 and 5 from the 2016 update (Upper Peninsula, East/Central Northern Lower Peninsula, Northwest Lower Peninsula, and East Southern Lower Peninsula). LAA 4 and LAA 6 were identified as underserved areas in the previous report but were slightly under the patient day threshold to be considered LAAs. A previous LAA (LAA 4 in 2016 report) is now only considered an underserved area, as the predicted patient days value was well beneath the threshold.

Given the increasing trend in patient day utilization in some regions, the identification of additional LAAs is not surprising, especially when considering that the two new LAAs were near the threshold in the 2016 calculation. However, the differences in the LAAs from the previous update could also be due to several reasons not related to health. First, the MSU/UNC team utilized a more recent roads data layer from the Michigan CGI. Minor changes in the roads (e.g., new roads) and/or road speed limits have the potential to affect the size of the underserved areas (outside of a 30-minute drive to the nearest acute care hospital). The team also used an updated Zip Code boundary layer. Minor shifts in the boundaries of Zip Codes could also have affected which Zip Codes are assigned to the underserved areas, which would affect the predicted number of patient days.

Table 1. Bed Need Results for 2018. Source Data: 2012–2016 MIDB. Excess Bed Need is calculated as the difference between Bed Need 2021 and Dept Inv 2018.

HG	ADC 2016	Bed Need 2021	Diff	Diff(%)	Bed Need 2021	Beds 2018	Dept Inv 2018	Excess Bed Need
1	3,058	2,964	-94	-3.07	2,964	4,070	4,044	1,080
2	2,753	2,827	74	2.69	2,827	3,507	3,507	680
3	1,652	1,687	35	2.12	1,687	2,030	2,030	343
4	1,374	1,292	-82	-5.97	1,292	1,973	1,973	681
5	1,294	1,287	-7	-0.54	1,287	1,788	1,783	496
6	248	259	11	4.44	259	375	375	116
7	823	802	-21	-2.55	802	1,086	1,086	284
8	322	306	-16	-4.97	306	389	389	83
9	67	64	-3	-4.48	64	113	113	49
10	730	770	40	5.48	770	899	899	129
11	298	319	21	7.05	319	417	427	108
12	233	184	-49	-21.03	184	316	316	132
13	64	63	-1	-1.56	63	237	237	174
14	1,375	1,409	34	2.47	1,409	1,842	1,862	453
15	323	322	-1	-0.31	322	462	462	140
16	175	170	-5	-2.86	170	311	311	141
17	134	129	-5	-3.73	129	237	237	108
18	79	79	0	0.00	79	143	143	64
19	1,208	1,279	71	5.88	1,279	1,441	1,441	162
20	1,134	1,147	13	1.15	1,147	1,708	1,688	541
21	47	47	0	0.00	47	188	188	141
22	62	59	-3	-4.84	59	192	192	133
23	62	63	1	1.61	63	160	160	97
24	430	426	-4	-0.93	426	550	550	124
25	167	181	14	8.38	181	227	227	46
26	82	84	2	2.44	84	124	124	40
27	60	64	4	6.67	64	102	102	38
28	222	255	33	14.86	255	314	282	27
29	53	50	-3	-5.66	50	89	89	39
30	56	50	-6	-10.71	50	111	111	61
31	72	69	-3	-4.17	69	107	107	38
32	7	7	0	0.00	7	23	23	16
33	4	4	0	0.00	4	15	15	11
State	18,668	18,718	50	0.27	18,718	25,546	25,493	6,775

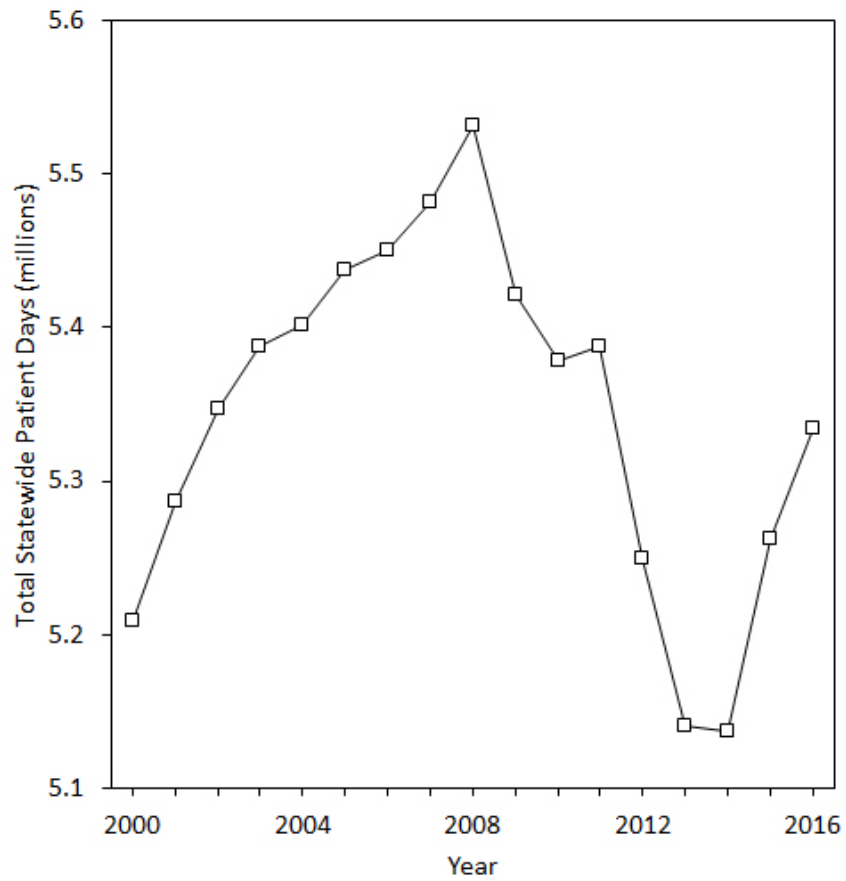


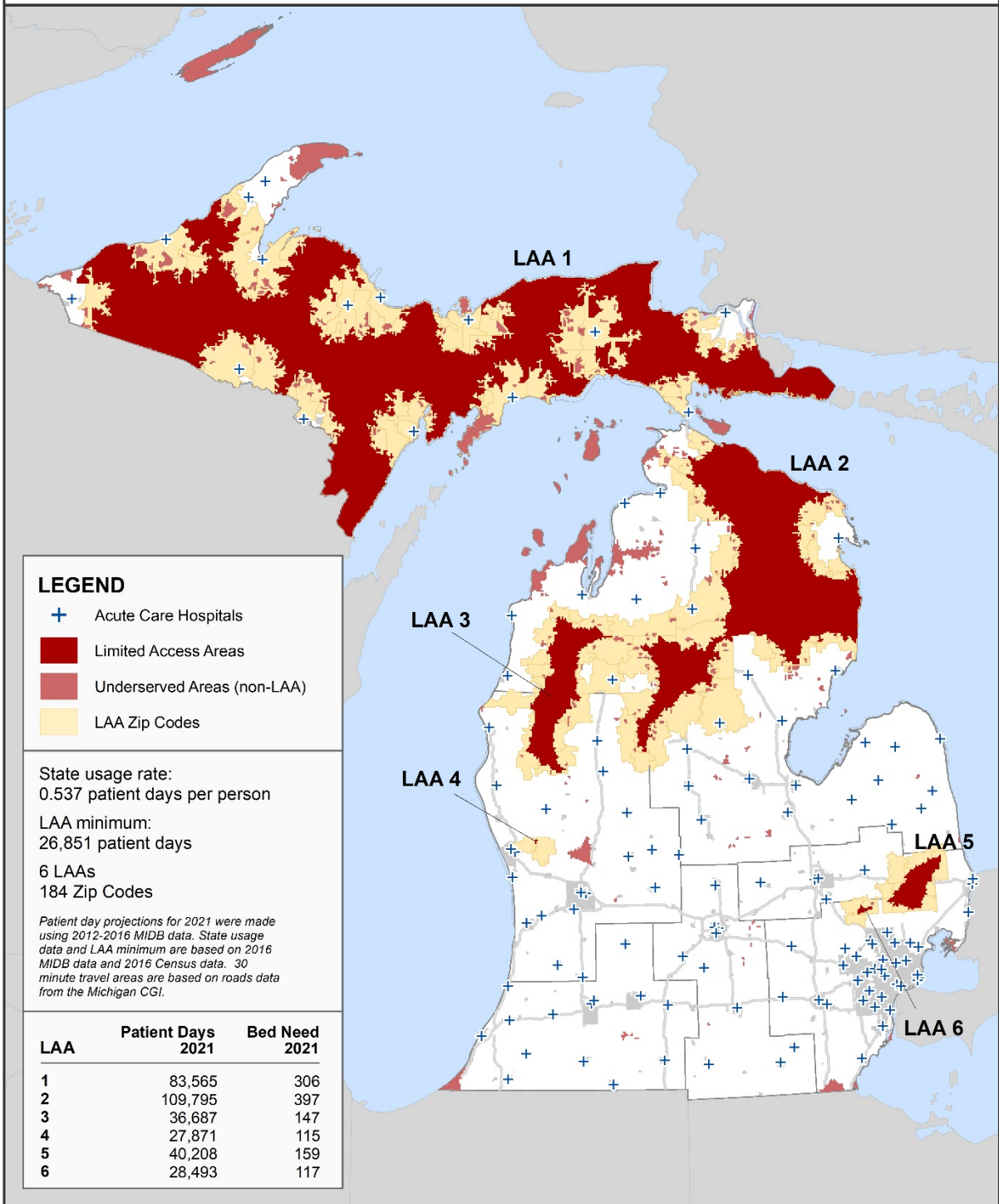
Figure 1. Statewide Patient Days, 2000–2016

Table 2. Bed Need for Limited Access Areas

LAA	Predicted Patient Days	Bed Need 2021
1	83,565	306
2	109,795	397
3	36,687	147
4	27,871	115
5	40,208	159
6	28,493	117

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Limited Access Areas



Map by: Jonnell C. Sanciango

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Figure 2. Limited Access Areas

Table 3. Limited Access Areas, Zip Codes

LAA 1			LAA 2		LAA 3	LAA 4	LAA 5	LAA 6
49710	49829	49885	48619	49651	49304	49442	48002	48348
49715	49831	49886	48621	49665	49309	49451	48003	48371
49719	49833	49887	48624	49667	49402		48005	48462
49725	49834	49891	48625	49679	49411		48006	
49726	49835	49892	48629	49705	49459		48014	
49728	49836	49893	48630	49706	49601		48022	
49736	49837	49895	48632	49709	49619		48041	
49745	49838	49896	48635	49716	49620		48062	
49752	49839	49905	48636	49721	49625		48065	
49760	49840	49910	48647	49738	49633		48097	
49762	49841	49912	48651	49743	49637		48367	
49768	49847	49916	48653	49744	49638		48428	
49774	49848	49919	48654	49746	49643		48444	
49780	49849	49920	48656	49747	49644			
49781	49853	49925	48705	49749	49645			
49801	49854	49935	48721	49751	49649			
49806	49855	49946	48728	49753	49656			
49807	49858	49947	48737	49756	49663			
49812	49861	49948	48738	49759	49668			
49814	49862	49952	48739	49765	49683			
49815	49866	49953	48740	49766	49689			
49816	49868	49958	48742	49769				
49817	49873	49962	48743	49776				
49818	49874	49965	48745	49777				
49820	49878	49967	48750	49779				
49821	49879	49968	48761	49792				
49822	49880	49969	48762	49799				
49825	49881	49970	49305					
49826	49883		49631					
49827	49884		49632					