

Nursing Home and HLTCU Beds: Appendix and Bed Need Updates, 2015

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Executive Summary

The Nursing Home and HLTCU Bed Need was updated using 2013 CON Survey data, 2013 US Census data, and 2018 population projection data from the Michigan Department of Technology, Management & Budget. The base year for the current update is 2013 and the planning year is 2018. The output includes three standalone Excel tables, 1: Patient day use rates by age cohort (Appendix B, formerly Appendix A), 2: Planning areas with a population density less than 28 people per mile² (Appendix E, formerly Appendix D), and 3: the Bed Need output. The code required to calculate the appendices and the bed need, written in R, is also provided in separate files. This report provides a brief explanation of the methodology, the updates, and the update process.

Appendix B: Patient day use rates by age cohort

The methodology used to update the Use Rates in Appendix B is found in Section 3.(1). The rates are based on current state-wide patient day utilization and population counts in four age cohorts: 0-64, 65-74, 75-84, and 85+.

The updates for Appendix B are relatively straight-forward; the statewide patient days for each age cohort are summed as is the statewide population for each cohort. The respective sums are then divided, then multiplied by 1,000 to produce a rate of patient days per 1,000 people. The 2013 patient days, state population, and use rates by age cohort are found in Table 1.

Table 1. Age specific use rates for 2013. The results are for the entire Michigan population and all facilities that reported data in 2013. PD Rate is patient days per 1,000 people and is the updated information for Appendix B of the Review Standards.

Age Cohort	Patient Days	Population	PD Rate
0-64	1,604,742	8,408,029	191
65-74	1,951,163	835,439	2,336
75-84	3,533,789	443,520	7,968
85p	6,052,397	208,634	29,010

An ongoing concern in the Nursing Home and HLTCU updates is missing facility data. In the previous update (performed in 2013), three facilities provided care, but did not report utilization data. In the current update, this number increased to 12 facilities (2.7% of the 448 facilities in MI). Because of these missing data, the new values in Appendix B are *guaranteed* to be lower than the true utilization in

the state. Effectively, the missing data artificially drives the use rates downward, which results in an underprediction in the number of beds needed throughout the state. In the current update, this may be as much as a 2.6% underprediction, given the missing facilities' recent utilization data. The missing facilities along with their patient day utilization data from 2012 are provided in Table 2.

Table 2. Facilities that did not report utilization data in 2013. Patient days are reported data from 2012, except for Arbor Hospice which is from 2011 because the facility did not report in 2013 or 2012.

Facility ID	Name	Patient Days (2012)
224040	Hyland Nursing Home	18,383
254240	Grand Blanc Rehabilitation & Nursing Center	45,167
294040	Michigan Masonic Home	71,006
544022	Altercare Of Big Rapids	33,344
634023	Clarkston Specialty Healthcare Center	37,779
634360	Greenfield Rehab And Nursing Center	38,373
754030	Riverview Manor	26,417
814140	Arbor Hospice	7,077
824290	Southgate Manor Skilled Nursing & Rehab	31,375
834070	Westwood Nursing Center	35,855
834540	Law-Den Nursing Home	7,126
783010	Memorial Healthcare Center LTCU	6,843
<i>State Total</i>		<i>358,745</i>

Appendix E: Population Density

A special high occupancy provision for adding beds is found in Section 6.(1)(d)(iii). Beds may be added if the planning area meets volume requirements and has less than 28 people per mile². Planning areas having a population density less than this requirement are identified in Appendix E of the Review Standards.

Using updated county and municipal boundaries (downloaded from the Michigan Center for Geographic Information) and 2013 US Census data, the population density for each planning area was calculated. Those having a population density less than 28 people per mile² are listed in Table 3.

Bed Need

The methodology used to calculate the number of nursing home and HLTCU beds can be found in Section 3.(2) of the Standards. For each planning area, the predicted population for the planning year (2018) in each age cohort is multiplied by its respective use rate from Appendix B. This produces the planning year patient days per age cohort, which are then summed for each planning area. The resulting total patient days are divided by 365 to produce the planning areas' average daily census (ADC) for the planning year.

In Section 3.(2)(e), the bed need in the planning year is calculated by dividing the planning year ADC by an ADC adjustment factor. For planning areas having an ADC less than 100, the factor is 0.9

Table 3. Population Density of NH planning areas. Based on 2013 population data for planning areas with a population density of less than 28 people per mile².

Planning Area	Area	Population	Population Density
Ontonagon	1,327.8	6,322	4.76
Schoolcraft	1,220.9	8,247	6.75
Luce	926.2	6,502	7.02
Baraga	916.7	8,695	9.49
Iron	1,210.9	11,516	9.51
Alger	936.2	9,522	10.17
Mackinac	1,063.4	11,061	10.40
Gogebic	1,144.7	15,916	13.90
Oscoda	571.2	8,379	14.67
Alcona	694.4	10,578	15.23
Montmorency	562.4	9,350	16.63
Presque Isle	684.8	13,062	19.07
Lake	573.9	11,386	19.84
Chippewa	1,809.0	38,696	21.39
Menominee	1,051.0	23,791	22.64
Houghton-Keweenaw	1,604.4	38,416	23.94
Crawford	563.0	13,904	24.70
Missaukee	573.4	15,051	26.25

and for those with an ADC of 100 or greater, the factor is 0.95. This result is rounded up to the next whole number under the assumption that a partial bed is a bed. The updated bed need calculations can be found in Table 4.

Table 4. Nursing Home and HLTCU bed need. Base year: 2013, Planning year: 2018.

Planning Area	AF	Bed Need	Planning Area	AF	Bed Need
Alcona	0.9	80	Lapeer	0.95	336
Alger	0.9	52	Leelanau	0.95	157
Allegan	0.95	411	Lenawee	0.95	405
Alpena	0.95	146	Livingston	0.95	660
Antrim	0.95	118	Luce	0.9	34
Arenac	0.9	85	Mackinac	0.9	60
Baraga	0.9	39	Macomb	0.95	3,606
Barry	0.95	245	Manistee	0.95	129
Bay	0.95	478	Marquette	0.95	295
Benzie	0.9	108	Mason	0.95	141
Berrien	0.95	688	Mecosta	0.95	174
Branch	0.95	174	Menominee	0.95	118
Calhoun	0.95	545	Midland	0.95	370
Cass	0.95	230	Missaukee	0.9	71
Charlevoix	0.95	127	Monroe	0.95	601
Cheboygan	0.95	148	Montcalm	0.95	248
Chippewa	0.95	149	Montmorency	0.9	67
Clare	0.95	155	Muskegon	0.95	634
Clinton	0.95	302	Newaygo	0.95	206
Crawford	0.9	78	Oakland	0.95	4,673
Delta	0.95	201	Oceana	0.95	107
Dickinson	0.95	121	Ogemaw	0.95	119
Eaton	0.95	464	Ontonagon	0.9	41
Emmet	0.95	159	Osceola	0.9	109
Genesee	0.95	1,666	Oscoda	0.9	44
Gladwin	0.95	138	Otsego	0.95	118
Gogebic	0.9	94	Ottawa	0.95	952
Grand Traverse	0.95	395	Presque Isle	0.9	99
Gratiot	0.95	176	Roscommon	0.95	154
Hillsdale	0.95	212	Saginaw	0.95	858
Houghton and Keweenaw	0.95	156	Saint Clair	0.95	654
Huron	0.95	183	Saint Joseph	0.95	246
Ingham	0.95	855	Sanilac	0.95	191
Ionia	0.95	209	Schoolcraft	0.9	51
Iosco	0.95	161	Shiawassee	0.95	276
Iron	0.9	92	Tuscola	0.95	221
Isabella	0.95	212	Van Buren	0.95	272
Jackson	0.95	627	Washtenaw	0.95	1,141
Kalamazoo	0.95	947	Wexford	0.95	144
Kalkaska	0.9	81	South Wayne County	0.95	1,465
Kent	0.95	2,058	Northwest Wayne County	0.95	2,485
Lake	0.9	70	Detroit and Eastern Wayne County	0.95	2,414