## APPENDIX A

### Designated Health Planning Areas in Wisconsin
### Under 42 USC 300L
### [HSS 123.03 (19)]

*Health Service Area #1*

Columbia, Dane, Dodge, Grant, Green, Iowa, Jefferson, Lafayette, Richland, Rock, Sauk counties

*Health Service Area #2*

Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, Waukesha counties

*Health Service Area #3*

Calumet, Fond du Lac, Green Lake, Marquette, Outagamie, Waupaca, Waushara, Winnebago counties

*Health Service Area #4*

Brown, Door, Kewaunee, Manitowoc, Marinette, Menominee, Oconto, Shawano, Sheboygan counties

*Health Service Area #5*

Barron, Buffalo, Chippewa, Clark, Crawford, Dunn, Eau Claire, Jackson, La Crosse, Monroe, Pepin, Pierce, Polk, Rusk, St. Croix, Trempealeau, Vernon counties

*Health Service Area #6*

Adams, Florence, Forest, Juneau, Langlade, Lincoln, Marathon, Oneida, Portage, Taylor, Vilas, Wood counties

*Health Service Area #7*

Ashland, Bayfield, Burnett, Douglas, Iron, Price, Sawyer, Washburn counties

APPENDIX B
TABLE B-1: CT INPATIENT PROCEDURE PROJECTIONS
[s. HSS 123.19(3)(b)]

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### HEAD PROCEDURES

| | Primary Discharges* | Primary Discharge Factor | Initial Inpatient Procedures | Follow-up Factor | Total Follow-up Procedures | Secondary Discharges* | Secondary Discharge Factor** | Initial Secondary Procedures | Total Inpatient Procedures |
|---|---|---|---|---|---|---|---|---|---|
| Head Neoplasms | | X1.0 | | X1.10 | | | XF | | |
| Other Head Disorder | | X.84 | | X.14 | | | XF | | |
| Head Total | | | (A) | | (B) | | | (B) | (A+B+C) |

### BODY PROCEDURES

| | Primary Discharges* | Primary Discharge Factor | Initial Inpatient Procedures | Follow-up Factor | Total Follow-up Procedures | Secondary Discharges* | Secondary Discharge Factor** | Initial Secondary Procedures | Total Inpatient Procedures |
|---|---|---|---|---|---|---|---|---|---|
| Body Neoplasms | | X.45 | | X1.10 | | | XF | | |
| Other Body Disorder | | X.22 | | X.14 | | | XF | | |
| Body Total | | | (A) | | (B) | | | (C) | (A+B+C) |

### SPINE PROCEDURES

| | Primary Discharges* | Primary Discharge Factor | Initial Inpatient Procedures | Follow-up Factor | Total Follow-up Procedures | Secondary Discharges* | Secondary Discharge Factor** | Initial Secondary Procedures | Total Inpatient Procedures |
|---|---|---|---|---|---|---|---|---|---|
| Spine Disorders or Trauma | | X.22 | | X.14 | | | XF | | |
| Spine Total | | | (A) | | (B) | | | (C) | (A+B+C) |

*Primary and secondary discharges are calculated by using the ICD-9-CM codes found in the application materials approved by the Department.

**Secondary Discharge Factor $F = .05 \times \dfrac{A+B}{A}$

TABLE B-2

CT SCAN MIX AND HECT CONVERSION

[s. HSS 123.19(3)(b)]

| Scan Location | Scan Mix Factor | Scan Type | HECT Conversion Factor | HECT Count |
|---|---|---|---|---|
| Total Head | X.10 | Head Unenhanced | X1.00 | |
| Total Head | X.05 | Head Enhanced | X1.25 | |
| Total Head | X.85 | Head Combined | X1.75 | |
| Total Body | X.10 | Body Unenhanced | X1.50 | |
| Total Body | X.65 | Body Enhanced | X1.75 | |
| Total Body | X.25 | Body Combined | X2.75 | |
| Total Spine | X1.00 | All Spine | X3.00 | |

Total HECTS _____

TABLE B-3
CT OUTPATIENT CONVERSION
[s. HSS 123.19(3)(b)]

| Total Inpatient Procedures | | Outpatient Conversion | Total Inpatient Outpatient Scans |
|---|---|---|---|
| Total Inpatient Head | _____ | ÷ .55 = | _____ |
| Total Inpatient Body | _____ | ÷ .55 = | _____ |
| Total Inpatient Spine | _____ | ÷ .55 = | _____ |

APPENDIX C

TABLE C-1: FORMULA FOR PROJECTING NEED FOR ACUTE CARE BEDS

[s. HSS 123.27(3)(c)3.]

ACUTE CARE SERVICE AREA XX

| Hospital Service | Discharge x Rate/1,000 | Length of x Stay | 199X Projected Pop. in 1,000 | = | 199X Projected Patient Days | ÷ = 365 | Projected Average Daily Census | ÷ Occupancy = Standard | Unadjusted 199X Bed Need | 199X Bed Need | - Approved Beds | = 199X Bed Excess or Need |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pediatrics | $xx.xx^{(1)}$ | $x.xx^{(7)}$ | $xx.xxx^{(13)}$ | | $xxxxx.x^{(19)}$ | | $xx.x^{(25)}$ | $.xx$ | $xx.x^{(31)}$ | $xx^{(35)}$ | $xx^{(40)}$ | $xx^{(45)}$ |
| Medical/Surgical | | | | | | | | | | | | |
| 15-44 years | $xx.xx^{(2)}$ | $x.xx^{(8)}$ | $xxx.xxx^{(14)}$ | $xxxxx.xx^{(20a)}$ | | | | | | | | |
| 45-64 years | $xxx.xx^{(4)}$ | $x.xx^{(9)}$ | $xx.xxx^{(15)}$ | $xxxxx.xx^{(20b)}$ | | | | | | | | |
| 65-74 years | $xxx.xx^{(4)}$ | $x.xx^{(10)}$ | $xx.xxx^{(16)}$ | $xxxxx.xx^{(20c)}$ | | | | | | | | |
| 75 + years | $xxx.xx^{(5)}$ | $x.xx^{(11)}$ | $xx.xxx^{(17)}$ | $xxxxx.xx^{(20d)}$ | | | | | | | | |
| TOTAL | | | | | $xxxxxx.x^{(20e)}$ | | $xxx.x^{(26)}$ | $.xx$ | $xxx.x^{(32)}$ | $xxx^{(36)}$ | $xxx^{(41)}$ | $xx^{(46)}$ |
| Obstetrics | $xx.xx^{(6)}$ | $x.xx^{(12)}$ | $xx.xxx^{(18)}$ | | $xxxxx.x^{(21)}$ | | $xx.x^{(27)}$ | $.xx$ | $xx.x^{(33)}$ | $xx^{(37)}$ | $xx^{(42)}$ | $xx^{(47)}$ |
| ICU/CCU | $x.x$ percent of nonobstetric patient days$^{(22)}$ | | | | PED $xxx.x^{(23)}$ M/S $xxxx.x^{(24)}$ | | $x.x^{(28)}$ $xx.x^{(29)}$ | $.xx$ $.xx$ | | | | |
| | | | | | | | $xx.x^{(30)}$ | $.xx$ | $xx.x^{(34)}$ | $xx^{(38)}$ | $xx^{(43)}$ | $x^{(48)}$ |
| | | | | | | | | | | $xxx^{(39)}$ | $xxx^{(44)}$ | $xxx^{(49)}$ |

TABLE C-1:  NOTES

(1)  Discharges from ACSA hospitals for Wisconsin residents under 15 years of age excluding newborns and discharges for diagnosis in (6)
Under 15 market share population for ACSA excluding in-migration adjustment

(2)  Discharges from ACSA hospitals for Wisconsin residents 15-44 years of age excluding discharges for diagnoses in (6)
15-44 market share population for ACSA excluding in-migration adjustment

(3)  Discharges from ACSA hospitals for Wisconsin residents 45-64 years of age excluding discharges for diagnoses in (6)
45-64 market share population for ACSA excluding in-migration adjustment

(4)  Discharges from ACSA hospitals for Wisconsin residents 65-74 years of age excluding discharges for diagnoses in (6)
65-74 market share population for ACSA excluding in-migration adjustment

(5)  Discharges from ACSA hospitals for Wisconsin residents 75 years of age and over excluding discharges for diagnoses in (6)
75 years of age and over market share population for ACSA excluding in-migration adjustment

(6)  Discharges from ACSA hospitals for Wis. residents with the following principal ICDA discharge diagnoses
630.0, 633.0-633.2, 633.8, 633.9, 640.0-646.9, 648.0-676.0
One-half the population 15-44 market share population for ACSA excluding in-migration adjustment

OR, IF SMALLER,

(1a)  Discharges from all hospitals in Wisconsin for Wis. residents under 15 years of age + Change in pediatric discharge rate + One standard
excluding newborns and discharges for diagnoses in (6)                                                        projected over the next 5 years      deviation using
Wisconsin under 15 years of age population                                                                   using a linear regression method     a poisson
                                                                                                             for the most recent 7 years of      distribution =
                                                                                                             national discharge data             $\sqrt{\text{Statewide discharge rate}}$

(2a)  to (6a) same as (1a) for age groupings in (2) to (6) above.

(7)  Patient days from ACSA hospitals for Wis. residents under 15 years of age, excluding newborns and discharges for diagnoses in (6)
     Discharges from ACSA hospitals for Wis. residents under 15 years of age, excluding newborns and discharges for diagnoses in (6)

(8)  Patient days from ACSA hospitals for Wisconsin residents 15-44 years of age, excluding discharges for diagnoses in (6)
     Discharges from ACSA hospitals for Wisconsin residents 15-44 years of age, excluding discharges for diagnoses in (6)

(9)  Patient days from ACSA hospitals for Wisconsin residents 45-64 years of age excluding discharges for diagnoses in (6)
     Discharges from ACSA hospitals for Wisconsin residents 45-64 years of age excluding discharges for diagnoses in (6)

(10) Patient days from ACSA hospitals for Wisconsin residents 65-74 years of age excluding discharges for diagnoses in (6)
     Discharges from ACSA hospitals for Wisconsin residents 65-74 years of age excluding discharges for diagnoses in (6)

(11) Patient days from ACSA hospitals for Wisconsin residents 75 and over excluding discharges for diagnoses in (6)
     Discharges from ACSA hospitals for Wisconsin residents 75 and over excluding discharges for diagnoses in (6)

(12) Patient days from ACSA hospitals for Wisconsin residents with the principal discharge diagnoses in (6)
     Discharges from ACSA hospitals for Wisconsin residents with the principal discharge diagnoses in (6)

OR, IF SMALLER,

(7a) Patient days from all hospitals for Wisconsin residents under 15 years of age, excluding newborns + Change in pediatric lengths of + One standard
     and discharges for diagnoses in (6)                                                                   stay projected over the next 5   deviation
     Discharges from all hospitals for Wisconsin residents under 15 years of age, excluding newborns       years using a linear regression  using a
                                                                                                           method for the most recent 7     normal
                                                                                                           years of national discharge      distribution
                                                                                                           data.

$$\sqrt{\frac{E(Xi-X)^2}{N-1}}$$

(8b) to (12b)  Same as (7a) for age groupings in (8) to (12) above.

     Discharges in categories (1-12) and (1a-12a) exclude principal ICDA discharge diagnosis of 290 to 316 (except 303 and 304 and 305) for hospitals
     with an inpatient psychiatric service and 303 and 304 for hospitals with a chemical dependency service.

Calculation of ACSA population:

R x Zip Code Pop. = ACSA in-state
population

$$R = \frac{\text{Admissions from zip code to ACSA hospitals}}{\text{Admissions from a zip code area to any Wisconsin Hospital}}$$

Zip Code population = MCD-Zip conversion
factor for each
MCD-Zip Code
fragment
(proportion of a
given MCD served
by a given zip code
area times the MCD
population
estimate)

The in-state ACSA populations are
adjusted to incorporate out-of-state
population increase due to care provided
residents of other states:

out-of-state = out-of-state x in-state
population   discharges    population
to the ACSA
in-state
discharges
to the ACSA

Age cohort distribution are based on a
determination of which counties had at
least 50% of their geographic area within
either primary or secondary service area
of the ACSA. The proportional
representation of each cohort as
projected in the county or counties is
applied to the total ACSA population.

(13)-(17)  1990 population projection
based on calculation of ACSA
in-state population +
in-migration adjustment x
county age cohort distribution

(18)  One half the population 15-44 to
represent the population of
childbearing age

(19)  Projected Patient Days for patients
under 15 years of age

(20e)  Sum of Projected Patient Days for
medical/surgical patients 15 years
of age and over = (20a) + (20b) +
(20c) + (20d)

(21)  Projected Patient days for
obstetric patients

(22)  ICU/CCU patient days as a
percentage of total non-
obstetric patient days for the
ACSA (data from the Wisconsin
Annual Survey of Hospitals)

(23)  (22) x (19)
(24)  (22) x (20e)
(25)  (19) ÷ 365 (# of days in year)
(26)  (20e) ÷ 365
(27)  (21) ÷ 365
(28)  (23) ÷ 365
(29)  (24) ÷ 365
(30)  (23) + (24)
(31)  (25) ÷ Occupancy Standard in
Appendix D
for the service bed
complement in ACSA. For
services of less than 10
beds, the medical/surgical
occupancy standard applies.

(32)  (26) ÷ Occupancy Standard in
Appendix D for the service
bed complement in ACSA.

(33)  (27) ÷ Occupancy Standard in
Appendix D for the service
bed complement in ACSA

(34)  (30) ÷ Occupancy Standard in
Appendix D for the service
bed complement in ACSA.
If a separate pediatric
intensive care unit
exists in the service
area, bed need is
calculated for 28 and
29 using the occupancy
standard for the entire
ICU/CCU bed complement

(35)  (31) rounded to the nearest whole
number

(36)  (32) minus (34) rounded to nearest
whole number

(37)  (33) rounded to the nearest whole
number

(38)  (34) rounded to the nearest whole
number

(39)  (35) + (36) + (37) + (38)

(40)-(43)  Service bed complement by ACSA
from the Annual Survey of
Hospitals adjusted for beds
closed, deactivated or
decertified under s. 123.30

(44)  (40) + (41) + (42) + (43)
(45)  (40) - (35)
(46)  (41) - (36)
(47)  (42) - (37)
(48)  (43) - (38)
(49)  (44) - (39)

TABLE C-2:  FORMULA FOR PROJECTING NEED FOR SHORT-TERM INPATIENT PSYCHIATRIC BEDS
[s. HSS 123.27(4)(b)2.]
SERVICE AREA XX

| Use Rate/ 1,000 | x Length of stay | x 199X Population (in 1,000's) | = | 199X Projected Patient Days | ÷ | 365 | = | 199X Projected Average Daily Census | Occupancy Standard (%) | = | Unadjusted 199X Bed Need | 199X Bed Need | − | Approved Beds | = | 199X Bed Excess or Need |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $x.x^{(1)}$ | $xx.x^{(2)}$ | $xxx.xxx^{(3)}$ | = | $xxxxx^{(4)}$ | ÷ | 365 | = | $xxx.xx^{(5)}$ | $xx$ | = | $xx.x^{(6)}$ | $xx^{(7)}$ | − | $xx^{(8)}$ | = | $xx^{(9)}$ |

(1)  Use rate = <u>Total number of admissions to short-term inpatient psychiatric services in the service area*</u>
Current service area population

OR, IF SMALLER,

= <u>Total number of admissions to short-term inpatient psychiatric services in Wisconsin*</u>
Current Wisconsin population

(2)  Length of stay = <u>Total patient days in short-term inpatient psychiatric services in the service area*</u>
Total number of admissions to short-term inpatient psychiatric services in the service area*

OR, IF SMALLER,

= <u>Total patient days in short-term inpatient psychiatric services in Wisconsin*</u>
Total number of admissions to short-term inpatient psychiatric services in Wisconsin*

(3)  Projected population in 199X for the service area, based upon information provided by the University of Wisconsin Applied Population Laboratory and the State Department of Administration.

(4)  (1) x (2) x (3)

(5)  (4) ÷ 365 (number of days in the year)

(6)  (5) ÷ Occupancy standard in Appendix D for the bed complement in the service area.

(7)  (6) rounded to the nearest whole number

(8)  Total number of approved short-term inpatient psychiatric beds in the service area.

(9)  (7) - (8)

*Information on patient days and admissions from the Annual Survey of Hospitals.