

641—203.1(135) Acute care bed need.**203.1(1) Purpose and scope.**

a. The methodology described in this section provides the basis for estimating the anticipated number of patient-days of acute care hospital service that Iowa citizens will need in the future. The methodology embodies predictive indicators of acute care usage, population and demographic adjustments, and “target” usage rates. The “target” rates express the intent to reduce the levels of acute care usage in areas of the state where that usage is excessive, and not otherwise attributable to the presence of high-usage population groups.

b. The number of acute care beds which will be needed by each of the state’s hospitals in the future is a function of the number of patient-days of acute care that will be needed by Iowa citizens, with allowance for the needs of specific population groups and for the travel distance to and location of the state’s hospitals.

c. Certificate of need project applications are to be evaluated against the projected bed need determination for those hospitals seeking permission to:

1. Construct new acute care beds;
2. Modernize or renovate acute care beds/patient nursing units;
3. Convert acute care beds from one service use to another;
4. Add to the square footage space of the hospital, where it might be architecturally feasible and cost-effective to convert excess bed space.

d. The methodology responds to the following criteria for evaluation of certificate of need applications:

1. The need of the population for the health services;
2. Availability of alternative, less costly or more effective methods of providing the proposed services;
3. Relationships of the proposed service to the existing health care system of the area;
4. Consideration of the capacity to provide services and consideration of alternatives such as sharing or cooperating arrangements;
5. Other existing facilities providing similar services to those proposed are being used in an appropriate and efficient manner.

203.1(2) Definitions.

a. “*Estimated patient-day use rate*” means the number of days of hospital care provided per year, per thousand residents of a county (or the state). The rate is calculated by adding together all of the patient-days per year for residents of a county (or state), obtained from the records of hospitals where those residents received services. The total patient-days is then divided by the number of residents in the county (or the state), and the answer is expressed as “X patient-days per 1,000 persons.” A patient-day use rate can be calculated for any specific age group by identifying the number of patient-days of use by residents in that age group and dividing by the number of residents in that age group.

b. “*Target use rate*” for a county means the patient-day use rate that establishes a projected need level for the county at a future point in time. A target use rate can be determined for a specific age group, using the method described above. In this methodology, target use rates will be determined for four age groups: 0-14, 15-44, 45-64, and 65 and older. Therefore, each county will have four target use rates. For each county, the target use rate for each age group shall be the lowest of (1) the estimated patient-day use rate for the county during the survey period or (2) the state average estimated patient-day use rate during the survey period. The rates in effect at the time that an application is declared complete by the state are the rates employed in reviewing that application.

c. “*Patient destination patterns*” means the distribution, by hospital, of the total patient-days of each county. The patterns show where patients were referred for hospital service.

d. “*Patient destination proportion*” means the percentage of a given county’s patient-days that occurred in any given hospital.

e. “*Target occupancy rate*” means the desired average annual percent of a given hospital’s usable beds that will be occupied. An occupancy rate is determined by dividing a hospital’s average daily census

(ADC) of patients by the facility's number of usable beds. A "target" occupancy establishes desired levels of efficiency.

f. "Acute care beds" means short-stay hospital beds including general medical/surgical, pediatric, obstetric, psychiatric and other short-stay specialized beds.

203.1(3) Data requirements.

a. Patient destination patterns, patient destination proportions, and the patient-use of acute care services shall be determined from the most recent statewide patient origin and destination study. Such a study shall be conducted at intervals not to exceed three years and shall be the responsibility of the department of public health. The initial study conducted in 1977 produced target utilization rates. Those target rates produced by subsequent studies shall be reviewed as to their continued appropriateness at the time each three-year study is analyzed. If better data is submitted in the interim between studies such shall be considered in readjusting the target use rates. As revised target use rates are determined by study, the Statewide Health Coordinating Council (SHCC) shall review the new target use rates to determine their appropriateness. All Iowa hospitals shall participate in the survey and shall cooperate with the department in providing the most accurate information available. Out-of-state hospitals will also be surveyed in order to obtain information on Iowa residents receiving hospital care out of the state.

b. Population estimates and projections shall be obtained from the most recent Official Iowa Population Projections, published by the department of economic development. The projecting horizon used in this methodology shall be ten years in the future. Using the year of the most recent patient origin and destination study as "year one," projected patient-day use rates will be applied to the projected populations in "year ten" (example: from the information in the 1977 patient origin and destination study, projections will be made for 1987).

c. Data pertaining to bed capacity and annual patient-days shall be obtained from the most recent Annual Report for Hospital and Related Health Facilities submitted by hospitals to the department of public health.

203.1(4) Methodology.

a. Annual "estimated patient-day use rate" by county:

(1) Annually adjust the patient-day information obtained from the one month patient origin and destination study by multiplying the patient-days of each hospital by the ratio of annual patient-days (obtained from the Annual Report) to sample month patient-days (obtained from the patient origin and destination study).

(2) To determine estimated annual county patient-days for each of the age groups (0-14, 15-44, 45-64 and 65 and older) for any given county do the following: first, annually adjust all patient-days identified in the one month survey as described in (1) above; second, for each hospital identify the residence of origin of their annually adjusted patient-days by each specific county; third, for each county identify the annually adjusted patient-days for that county's residents from all of those hospitals which served the residents of the county during the patient origin study period. Follow the same procedure for each age group.

(3) To determine the county patient-day use rate for each age group divide the number of patient-days for that age group (identified in (2) above) by the population of the county in that age group. Express the results as "X number of patient-days per 1,000 residents in Y age group."

b. Annual "estimated patient-day use rate" by state. For each age group add together the estimated annual county patient-day for that age group in all counties and divide by the state population in that age group.

c. To determine target use rates—each county will have four target use rates; one for each of the age groups 0-14, 15-44, 45-64, and 65 and older. The target use rate for any age group for a county will be the lowest of:

- (1) Estimated annual patient-day use rate for the age group in that county;
- (2) Estimated annual patient-day use rate for the age group in the state.

d. To determine projected patient-days for a county—multiply the target rate for each age group by the projected county population in that age group for the year ten years after the most recent patient origin survey (counting the survey year as "year one").

e. To determine facility projected patient-days—for each of the four age groups divide up the projected patient-days for each county among the hospitals that served the county during the patient origin study period. The distribution of any county’s projected patient-days (in each age group) will be made in accordance with the percentage distribution of patient-days (in each age group) among the various hospitals in the study period. The percentage distribution number for any given hospital of the patient-days of any given county is called the “patient destination proportion.” Add together all of the projected patient-days in each of the four age groups going to each hospital from all of the counties served by that hospital.

f. To determine a facility’s projected patient-days for out-of-state residents—first, determine the in-state and out-of-state percentage of patient-days identified for each facility during the patient origin survey period; next divide a given facility’s in-state percentage into its number of projected patient-days in the patient origin survey. The projected patient-days for facility A from Iowa counties is 2,000. To expand the patient-days to allow for the anticipated out-of-state patients divide 2,000 by .90 to get 2,222. (Ninety percent of 2,222 would be 2,000 and 222 would allow for the 10 percent out-of-state patients expected to use the hospital in the future projection.)

g. To determine facility projected bed need—divide the projected patient-days for the facility by 365 days to estimate the projected average daily census of patients. The average daily census for the facility will determine the facility’s projected bed need when allowance is made for a margin of unoccupied beds. The margin of unoccupied beds provides for the fluctuations in average-to-peak service periods. The smaller hospitals have a greater margin allowed in order to accommodate the necessary emergency and primary care functions that account for the majority of their patients. The following scale incorporates the margin and provides the link between the projected average daily census for a facility and the projected bed need.

If Average Daily Census (ADC) is:		Presumed Occupancy Rate:
1-30	$BN = 1.670 \times ADC$	60%
31-70	$BN = 50 + 1.250 \times (ADC - 30)$	61-70%
71-160	$BN = 100 + 1.111 \times (ADC - 70)$	71-80%
161-249	$BN = 200 + 1.124 \times (ADC - 60)$	81-83%
250 or more	$BN = 1.205 \times ADC$	83%

Specific exception—University of Iowa Hospitals and Clinics serve a unique role as a nearly exclusively tertiary facility with many specialized units. Its occupancy rate should allow for greater peak load fluctuation and therefore will have an occupancy rate of 80%.

203.1(5) Contingencies.

a. Patient-days for hospitals that close in the interim between revisions of the patient origin and destination study will be divided among other hospitals serving the same counties as the hospital that closed. The projected patient-days will be divided according to the percentage of the county’s patient-days going to each of the other hospitals serving that county. (Example: County A has a projected 1,000 patient-days divided among three hospitals—

Facility X = 60% of the patient-days = 600 patient-days

Facility Y = 20% of the patient-days = 200 patient-days

Facility Z = 20% of the patient-days = 200 patient-days

If Facility Z closes, the 200 patient-days would be distributed to Facilities X and Y according to the following ratios:

Facility X = 600/800	$600/800 \times 200 = 150$ patient-days
Facility Y = 200/800	$200/800 \times 200 = 50$ patient-days

Facilities X and Y will then have projected patient-days of 750 and 250 respectively.)

b. Joint planning in multiple-hospital communities is encouraged and any alternative distribution plan for the aggregate community bed need in those communities may be presented by the hospitals affected. So long as the total community bed need does not exceed the sum of the individual facility needs for the community and so long as all of the hospitals in the community agree to the alternative distribution plan, the plan will replace the distribution pattern determined by this methodology.