

TABLE 3.—DIAGNOSIS CODES FOR PROPOSED COMORBIDITY CATEGORIES—Continued

Description of proposed comorbidity	ICD-9-CM code	Proposed adjustment factor
Uncontrolled Type I Diabetes-Mellitus, with or without complications.	25003; 25083; 25013; 25023; 25033; 25093; 25043; 25053; 25063; and 25073.	1.10
Severe Protein Calorie Malnutrition .....	260 through 262 .....	1.12
Eating and Conduct Disorders .....	3071; 30750; 31203; 31233; and 31234 .....	1.03
Infectious Diseases .....	01000 through 04110; 04500 through 05319, 05440 through 05449; 0550 through 0770; 0782 through 0789; and 07950 through 07595.	1.08
Drug and/or Alcohol Induced Mental Disorders .....	2920; 2922; 2910; 29212; 30300; and 30400 .....	1.03
Cardiac Conditions .....	3910; 3911; 3912; 40201; 41403; 4160; and 4210 .....	1.13
Atherosclerosis of Extremity with Gangrene .....	44024 .....	1.17
Chronic Obstructive Pulmonary Disease .....	5100; 51883; 51884; 4920; 494; 49120 through 49122, and V461.	1.12
Artificial Openings-Digestive and Urinary .....	56960; V441 through V443; and V4450 .....	1.09
Severe Musculoskeletal and Connective Tissue Diseases .....	6960; 7100; 73000 through 73009; 73010 through 73019; 73020 through 73029; and 7854.	1.12
Poisoning .....	96500 through 96509; and 9654; 9670 through 9700; 9800 through 9809; 9830 through 9839; 986; 9890 through 9897.	1.14

### c. Patient Age and Gender

The cost regressions explored several alternative configurations of age and gender variables. The results indicate that the per diem cost rises as a patient's age increases, and the per diem cost are higher for female patients.

We examined the variation in the per diem cost for 5-year age intervals ranging from age 40 to 80 with open-ended categories ranging above age 80 and below 40 and determined that the effect of age was statistically significant. We initially ran the regression for three age groups consistent with the natural breaks in the distribution of age (under 55, 55 to 64, and 65 and over). The distribution showed that most Medicare psychiatric patients are under age 55 and over age 65. In addition, the distribution showed that the age group between 55 and 65 years of age increased the predictive power of the model only by a factor of .002 percent because there were few patients in that age category. For this reason, we are not proposing adjustments reflecting the three age groups. Rather, we are proposing to make a single adjustment of 13 percent for patients 65 years and over. We are proposing two age groups (under 65 and over 65) to correspond with the major populations within Medicare: the disabled and the elderly, which we believe are largely responsible for the age-related cost differences that we observed. In addition, preliminary results from the RTI International® research that used estimates of patient-specific routine cost per day (from a sample of 40 IPFs) found that splitting age into two groups (under 65 and over 65) has greater explanatory power than alternative age group configurations. The research study is described in more

detail in section V.C.1. of this proposed rule.

The cost regression implies that female patients are approximately 3 percent more costly than male patients. However, the explanatory power of the equation increases by less than .002 percentage points. There is also a small reduction in the age effect for the 65 and over age group (less than one percentage point). We also examined the alternative of including gender along with the three age groups (under 55, 55 to 64, and 65 and over) and compared the results to the regression without gender and with two age groups (under 65 and 65 and over). The fuller specification of age and gender only increased the explanatory power by .003 points and had little effect on the size of the age effects.

We know that the elderly and women are more frequently treated in psychiatric units than in freestanding psychiatric hospitals. When an indicator variable for psychiatric units is included in the cost regression, the age and gender effects decrease (the 65 and over age effect declines from approximately 13 percent to approximately 9 percent, and the gender effect decreases from approximately 3 percent to 2 percent). We are unable to determine the extent to which this interaction of psychiatric unit status with age and gender indicates higher direct costs of treating the elderly and women, as opposed to other reasons for the higher costs of psychiatric units. However, RTI International's® preliminary results, which used a better patient-specific cost variable for a sample of 40 hospitals found a much stronger effect for age than for gender. This is because the evidence currently available to us is limited and we believe we cannot

identify a direct link between the costs of psychiatric care in psychiatric units and treatment of female IPF patients. We are not proposing to adjust the per diem payment rate to account for gender. We invite comments on the appropriateness of including a gender variable as a payment adjustment as well as comments on the age categories used to identify variations in costs. We will continue to assess the effects of gender and age as we analyze more current data in the development of the final rule.

### d. Length of Stay

Cost regressions indicate that the per diem cost declines as the length of stay increases. We are proposing adjustments to account for ancillary and certain administrative costs that occur disproportionately in the first days after being admitted to an IPF (the variable per diem adjustments). We examined the per diem cost over a range of 1 to 14 days. According to the 1999 MedPAR data file, the per diem costs were highest on day 1 and declined for days 2 through 8 as indicated below. Per diem costs for days 9 and thereafter remained relatively consistent with the median length of stay in an IPF for Medicare beneficiaries. The cost regression analysis was used to determine the following proposed payment adjustments. Relative to a stay of 9 or more days, the resulting adjustments for the first 8 days of a stay that we are proposing to use in this IPF prospective payment system are as follows:

- The variable per diem adjustment for day 1 would be an increase of approximately 26 percent.