



dialysis. Among them, the history of hip fracture has never been surveyed and is a new survey item.

We used the survey data that were available when this report was being prepared (in November 2008); therefore, the values tabulated in this report are slightly different from those reported in "An Overview of Regular Dialysis in Japan (As of 31 December 2007)" (2), which was published as a rapid report in June 2008.

## METHODS

This survey is conducted every year by sending questionnaires to target dialysis facilities. The 4098 facilities surveyed in this study consisted of the member facilities of the Japanese Society for Dialysis Therapy as of 31 December 2007, and additional non-member facilities offering dialysis for patients with chronic kidney diseases. The number of facilities in the present survey increased by 47 (1.2%) from that in the preceding year's survey. The questionnaires were mainly sent and collected by mail; some were also faxed. Moreover, a floppy disk instead of the paper questionnaire was sent to the facilities that had earlier indicated a preference for it.

This survey consisted of two types. One was a facility survey, in which items related to the details of dialysis facilities, such as the number of patients, staff members, and patient stations at individual facilities, were investigated (using the questionnaire referred to as "sheet I"). The other was a patient survey, in which the epidemiological background, treatment conditions, and outcome of treatment of individual dialysis patients were investigated (using the questionnaires referred to as "sheets II, III, and IV").

The collection rate of the questionnaire (sheet I) at the end of 2007 was 98.88% (4052 facilities), which was higher than that for the 2006 survey (98.37%). The number of facilities from which both questionnaires (i.e. facility survey and patient survey) were collected was 3899 facilities (95.14%), which was also higher than that in the 2006 survey (93.98%). In addition, the number of facilities that responded via an electronic file on a floppy disk was 2935 facilities (75.28%), an increase of at least 6% from the 2006 survey.

### I. Tabulation of basic data on chronic dialysis patients at the end of 2007

Data on the dialysis patient population dynamics for the year 2007 were tabulated mainly on the basis of the results of the facility survey. The data included the number of new patients begun on dialysis, the number of patients who died, the crude death rate for the year 2007, and the total number of dialysis

patients at the end of 2007. The cumulative survival rate after introduction to dialysis was calculated using a life table method (2).

### II. Tabulation of data on new items surveyed

The following items were investigated with the survey on the dialysis patient population dynamics: the current status of dialysate solution quality control, hepatitis virus infection, and renal anemia therapy; the history of hip fracture; and the clinical conditions of patients at introduction to dialysis.

## RESULTS AND DISCUSSION

### I. Tabulation of basic data on chronic dialysis patients at the end of 2007

#### 1. Number of patients

Table 1 shows a summary of the dynamics of the dialysis patient population in Japan at the end of 2007 obtained from the present survey. Only the data on the durations of dialysis and the longest dialysis shown in this table were obtained from the patient survey, whereas the totals of other parameters were obtained from the facility survey.

The total number of dialysis patients in Japan at the end of 2007 was 275 242, as determined from the facility survey. The number of dialysis patients in Japan at the end of 2006 was 264 473, showing an increase of 4.1% (10 769 patients) from the end of 2006 to the end of 2007.

In the 2006 report, the change in the rate of annual increase in the number of dialysis patients at the end of each year (hereafter, the rate of annual increase in the dialysis patient population) was shown in a graph, and it was pointed out that the rate may reach 0% by around 2014. The rate shown in the 2006 report was calculated using the following equation:

$$\text{Rate of annual increase in the dialysis patient population (\%)} = \frac{\text{Dialysis patient population at the end of the target year} - \text{Dialysis patient population at the end of the previous year}}{\text{Dialysis patient population at the end of the previous year}} \times 100$$

The dialysis patient population at the end of each year, the denominator of the above equation, increases every year by the difference in the patient population between the target and previous years; therefore, the rate of annual increase in the dialysis patient population decreases even if the annual increase in the number of dialysis patients is constant because the dialysis patient population, which is the denominator of the equation, increases every year. If

**TABLE 1.** Current status of chronic dialysis therapy in Japan (as of 31 December 2007)

|   |   |                         |                           |                  |
|---|---|-------------------------|---------------------------|------------------|
| Number of facilities                            | 4 052                                     | Increase of 67 (1.7%)   |                           |                  |
| Equipment                                       | 108 583                                   | Increase of 4201 (4.0%) |                           |                  |
| Capacity  | 107 466                                   | Increase of 3893 (3.8%) |                           |                  |
|   | Simultaneous dialysis (patients)          | 364 286                 | Increase of 13 343 (3.8%) |                  |
|   | Maximum accommodation capacity (patients) | 275 242                 | Increase of 10 769 (4.1%) |                  |
| Chronic dialysis patients <sup>†</sup>          | 223 953                                   | (81.4%)                 |                           |                  |
| Daytime dialysis                                | 41 742                                    | (15.2%)                 |                           |                  |
| Nighttime dialysis                              | 187                                       | (0.1%)                  |                           |                  |
| Home dialysis                                   | 9 362                                     | (3.4%)                  |                           |                  |
| Peritoneal dialysis                             | 2 154.2                                   | Increase of 84.3        |                           |                  |
| Patients (per million)                          | 36 934                                    | Increase of 561 (1.5%)  |                           |                  |
| Number of patients newly introduced to dialysis | 25 253                                    | Increase of 1219 (5.1%) |                           |                  |
| Number of deceased patients                     |   |                         |                           |                  |
| Duration of dialysis <sup>‡</sup> (years)       | Male                                      | Female                  | Unknown                   | Total            |
| 0-4   | 83 516                                    | 47 173                  | 19                        | 130 708 (49.4%)  |
| 5-9   | 40 371                                    | 25 704                  | 1                         | 66 076 (25.0%)   |
| 10-14   | 18 803                                    | 13 467                  | 0                         | 32 270 (12.2%)   |
| 15-19   | 9 108                                     | 7 364                   | 0                         | 16 472 (6.2%)    |
| 20-24   | 5 241                                     | 4 362                   | 0                         | 9 603 (3.6%)     |
| ≥25   | 5 184                                     | 4 042                   | 1                         | 9 227 (3.5%)     |
| Total   | 162 223                                   | 102 112                 | 21                        | 264 356 (100.0%) |
| Longest dialysis history                        | 39 years, 8 months                        |                         |                           |                  |

<sup>†</sup>The total number of chronic dialysis patients is the total of the column for the number of patients in sheet I, and does not necessarily agree with the total number of patients counted according to the method of treatment. <sup>‡</sup>The number of dialysis patients was calculated from questionnaire sheets II to IV.

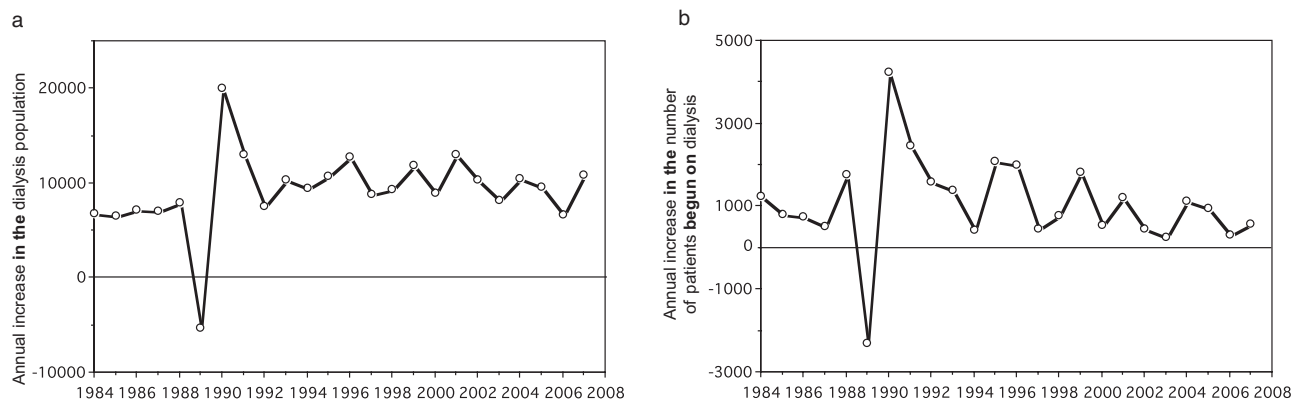
this is correct, the rate of annual increase approaches 0% with increasing dialysis patient population; however, it will never reach 0%.

To demonstrate the above prediction, the increases in the dialysis patient population at the end of each year were calculated. The annual trend is shown in Figure 1a. The annual increase in the dialysis patient population is approximately 10 000, and has tended to decrease over the past 10 years; however, it would still take a long time for the rate of annual increase in the dialysis patient population to reach 0%.

An estimated trend in the annual increase in the number of new patients begun on dialysis (hereafter, the annual increase in the number of new patients) is shown in Figure 1b. The annual increase in the

number of new patients is approximately 1000, similarly showing a decreasing trend over the past 10 years.

The number of facilities that responded to the questionnaire at the end of 2007 was 4052, which increased by 67 (1.7%) from the previous year. The number of patient stations at the end of 2007 was 108 583, which increased by 4201 (4.0%) from the previous year. The rates of increase in the number of patient stations and dialysis patients were higher than that in the number of dialysis facilities. This finding indicates that the number of patients treated at one facility has been increasing. The total number of patients who can simultaneously receive dialysis was 107 466, and the maximum capacity of all the

**FIG. 1.** Changes in the annual increase in (a) the dialysis population, and (b) the number of patients begun on dialysis.

facilities to provide dialysis was 364 286; both numbers increased in 2007.

The percentage of patients who received dialysis during the daytime further increased to 81.4%, whereas those receiving it during the nighttime decreased to 15.2%. The trends of the increasing number of daytime dialysis patients and the decreasing number of nighttime dialysis patients were the same as those in the 2006 survey.

The longest dialysis duration was 39 years and 8 months. The longest dialysis durations in the past 10 years were 31 years at the end of 1997, 32 years at the end of 1998, 33 years at the end of 1999, 34 years at the end of 2000, 35 years and 10 months at the end of 2001, 36 years and 8 months at the end of 2002, 37 years and 6 months at the end of 2003, 37 years and 3 months at the end of 2004, 38 years at the end of 2005, 39 years at the end of 2006, and 39 years and 8 months at the end of 2007. Thus, the longest dialysis duration has increased by approximately one year every survey up to the end of 2003, but the rate of increase in the longest dialysis duration has decreased since 2004. These long-term dialysis patients were begun on dialysis in the early stage of dialysis therapy in Japan; therefore, the above-described finding may indicate that 40 years have passed since these patients were begun on dialysis during this early stage of dialysis therapy and many of them have died of old age.

Table 2 shows the total number of dialysis patients in each prefecture of Japan determined from the facility survey. The number of dialysis patients per million at the end of 2007 was 2154.2 (Table 1). Table 3 shows changes in the number of dialysis patients per million.

## 2. Mean age

The dialysis patient population in Japan is aging yearly. The patient survey showed that the mean age of new patients begun on dialysis in 2007 was 66.8 years ( $\pm 13.3$ , SD, here and throughout), and the mean age of the entire dialysis patient population in 2007 was 64.9 years ( $\pm 12.7$ ) (Table 4). The dialysis patient population aged by 7.2 years from the end of 1987 to the end of 1997, but aged by 5.6 years from the end of 1997 to the end of 2007. Thus, the rate of aging of the dialysis patient population has decreased. Similarly, the mean age of new patients begun on dialysis increased by 6.3 years from the end of 1987 to the end of 1997, but increased by only 4.6 years from the end of 1997 to the end of 2007. These findings show that the rate of aging of new patients begun on dialysis has also decreased.

Table 5 shows the gender and age distributions of new patients begun on dialysis in 2007. Table 6 shows the gender and age distributions of all dialysis patients in 2007. Tables 7 and 8 show the age distribution according to the primary disease. The data in these tables were obtained from the patient survey.

## 3. Primary disease of new patients begun on dialysis

Table 7 shows a summary of the primary diseases of new patients begun on dialysis in 2007. Table 8 shows a summary of the primary diseases of all the patients at the end of 2007.

Table 9 shows changes in the percentage of patients according to the main primary disease of renal failure for the new patients begun on dialysis each year. Since 1983, when the patient survey was first conducted, the number of new patients with diabetic nephropathy as the primary disease has continuously increased. In 1998 the number of patients with diabetic nephropathy as the primary disease became the highest among the new patients begun on dialysis, instead of the former top primary disease, chronic glomerulonephritis, and has been continuously increasing. Among the new patients begun on dialysis in 2007, the numbers of patients with diabetic nephropathy and those with chronic glomerulonephritis as the primary diseases were 43.4% and 23.8%, respectively. The number of patients with an "unspecified" primary disease newly begun on dialysis has increased yearly, and the percentage was 10.2% in 2007. Following these three diseases, the percentage of patients with nephrosclerosis as the primary disease has been increasing, accounting for 10.0%. This increase is considered to be related to the aging of the new dialysis patients. The number of patients with polycystic kidney disease, rapidly progressive glomerulonephritis, chronic pyelonephritis, and systemic lupus erythematosus (SLE) nephritis as the primary diseases were also observed, and the percentages of these patients were nearly the same as those in the previous years.

Table 10 shows changes in the percentage of patients according to the primary disease of renal failure for all the dialysis patients each year. Reflecting the trend among new patients begun on dialysis each year, the number of patients with chronic glomerulonephritis as the primary disease of renal failure has continuously decreased yearly. Instead, the number of patients with diabetic nephropathy as the primary disease has continuously increased (chronic glomerulonephritis, 40.4%; diabetic nephropathy, 33.4% in 2007). Assuming that the dynamics of the dialysis patient population in Japan continues to show this trend, the percentage of patients with

**TABLE 2.** Numbers of chronic dialysis patients by prefecture

| Names of administrative divisions | Daytime | Nighttime | Home hemodialysis | Peritoneal dialysis | Total <sup>†</sup> |
|-----------------------------------|---------|-----------|-------------------|---------------------|--------------------|
| Hokkaido                          | 11 535  | 1 438     | 5                 | 450                 | 13 429             |
| Aomori Prefecture                 | 2 676   | 221       | 0                 | 121                 | 3 018              |
| Iwate Prefecture                  | 2 269   | 360       | 0                 | 144                 | 2 773              |
| Miyagi Prefecture                 | 3 548   | 832       | 0                 | 89                  | 4 469              |
| Akita Prefecture                  | 1 639   | 145       | 0                 | 63                  | 1 847              |
| Yamagata Prefecture               | 1 808   | 256       | 0                 | 139                 | 2 204              |
| Fukushima Prefecture              | 3 641   | 497       | 1                 | 230                 | 4 368              |
| Ibaraki Prefecture                | 5 335   | 854       | 1                 | 154                 | 6 344              |
| Tochigi Prefecture                | 4 326   | 719       | 0                 | 62                  | 5 108              |
| Gunma Prefecture                  | 3 949   | 751       | 19                | 133                 | 4 833              |
| Saitama Prefecture                | 11 355  | 1 961     | 0                 | 449                 | 13 784             |
| Chiba Prefecture                  | 9 410   | 1 851     | 4                 | 232                 | 11 493             |
| Tokyo                             | 20 771  | 5 039     | 9                 | 852                 | 26 665             |
| Kanagawa Prefecture               | 12 955  | 2 985     | 1                 | 524                 | 16 474             |
| Niigata Prefecture                | 3 402   | 993       | 1                 | 139                 | 4 535              |
| Toyama Prefecture                 | 1 837   | 279       | 0                 | 67                  | 2 184              |
| Ishikawa Prefecture               | 1 904   | 381       | 0                 | 86                  | 2 372              |
| Fukui Prefecture                  | 1 398   | 214       | 1                 | 79                  | 1 691              |
| Yamanashi Prefecture              | 1 759   | 210       | 1                 | 20                  | 1 990              |
| Nagano Prefecture                 | 3 481   | 646       | 0                 | 133                 | 4 260              |
| Gifu Prefecture                   | 3 386   | 613       | 3                 | 161                 | 4 160              |
| Shizuoka Prefecture               | 7 259   | 1 355     | 52                | 290                 | 8 908              |
| Aichi Prefecture                  | 11 200  | 3 108     | 3                 | 573                 | 14 931             |
| Mie Prefecture                    | 2 921   | 656       | 9                 | 137                 | 3 717              |
| Shiga Prefecture                  | 1 950   | 504       | 2                 | 92                  | 2 555              |
| Kyoto Prefecture                  | 4 091   | 957       | 2                 | 170                 | 5 220              |
| Osaka Prefecture                  | 16 707  | 2 741     | 9                 | 657                 | 20 154             |
| Hyogo Prefecture                  | 8 798   | 1 757     | 3                 | 332                 | 10 896             |
| Nara Prefecture                   | 2 507   | 222       | 1                 | 113                 | 2 845              |
| Wakayama Prefecture               | 2 298   | 293       | 0                 | 27                  | 2 619              |
| Tottori Prefecture                | 993     | 124       | 0                 | 116                 | 1 233              |
| Shimane Prefecture                | 1 140   | 145       | 0                 | 87                  | 1 372              |
| Okayama Prefecture                | 3 398   | 489       | 0                 | 243                 | 4 130              |
| Hiroshima Prefecture              | 5 536   | 527       | 0                 | 441                 | 6 504              |
| Yamaguchi Prefecture              | 2 660   | 359       | 0                 | 133                 | 3 152              |
| Tokushima Prefecture              | 1 954   | 287       | 0                 | 178                 | 2 419              |
| Kagawa Prefecture                 | 1 919   | 247       | 7                 | 239                 | 2 412              |
| Ehime Prefecture                  | 2 661   | 439       | 1                 | 166                 | 3 267              |
| Kochi Prefecture                  | 1 806   | 202       | 0                 | 45                  | 2 052              |
| Fukuoka Prefecture                | 9 729   | 2 218     | 1                 | 336                 | 12 283             |
| Saga Prefecture                   | 1 586   | 289       | 0                 | 13                  | 1 888              |
| Nagasaki Prefecture               | 2 828   | 522       | 1                 | 136                 | 3 487              |
| Kumamoto Prefecture               | 4 492   | 949       | 0                 | 150                 | 5 591              |
| Oita Prefecture                   | 3 045   | 361       | 1                 | 120                 | 3 527              |
| Miyazaki Prefecture               | 2 804   | 537       | 0                 | 55                  | 3 396              |
| Kagoshima Prefecture              | 4 147   | 529       | 2                 | 115                 | 4 792              |
| Okinawa Prefecture                | 3 140   | 680       | 0                 | 71                  | 3 891              |
| Total                             | 223 953 | 41 742    | 187               | 9362                | 275 242            |

<sup>†</sup>The total number of chronic dialysis patients is the total of the column for the number of patients in sheet I, and does not necessarily agree with the total number of patients counted according to the method of treatment. The number of dialysis patients was calculated based on facility survey data.

chronic glomerulonephritis as the primary disease and that with diabetic nephropathy will reverse in a few years; it is considered that the percentage of patients with diabetic nephropathy as the primary disease will become the largest also for all the dialysis patients. Patients with an unspecified primary disease accounted for 7.4% of all the dialysis patients. Following these three diseases, nephrosclerosis had the fourth largest number of patients.

#### 4. Causes of death

Table 11 shows the classification of the causes of death of new patients who were begun on dialysis in 2007 and who died by the end of 2007. Table 12 shows the classification of the causes of death of patients who died in 2007 in the entire dialysis patient population. Table 13 shows the changes in the percentages of the leading causes of death in the entire dialysis patient population. The classification of the causes of

**TABLE 3.** Changes in the number of patients per million

| Year              | Patients per million | Year | Patients per million |
|-------------------|----------------------|------|----------------------|
| 1983              | 443.7                | 1996 | 1328.4               |
| 1984              | 497.5                | 1997 | 1394.9               |
| 1985              | 547.8                | 1998 | 1472.5               |
| 1986              | 604.4                | 1999 | 1556.7               |
| 1987              | 658.8                | 2000 | 1624.1               |
| 1988              | 721.1                | 2001 | 1721.9               |
| 1989 <sup>†</sup> | 790.0                | 2002 | 1801.2               |
| 1990              | 835.7                | 2003 | 1862.7               |
| 1991              | 937.6                | 2004 | 1943.5               |
| 1992              | 995.8                | 2005 | 2017.6               |
| 1993              | 1076.4               | 2006 | 2069.9               |
| 1994              | 1149.4               | 2007 | 2154.2               |
| 1995              | 1229.7               |      |                      |

<sup>†</sup>The collection rate is corrected at 86%, that is, rounded off at the 100th order. The number of dialysis patients was calculated based on facility survey data.

death was changed on the basis of the tenth revision of the international statistical classification of diseases and related health problems (ICD-10) starting with the survey at the end of 2003.

The causes of death of new patients begun on dialysis in 2007 were infectious diseases (24.2%), cardiac failure (23.2%), malignant tumors (10.3%), cerebrovascular disorder (5.5%), and cardiac infarction (3.5%). The major cause of death of new patients begun on dialysis was cardiac failure until 2002. The percentage of dialysis patients who died of infectious diseases has increased and become as large as that of dialysis patients who died of cardiac failure since 2003; this trend has continued until 2007. The increases in the numbers of elderly patients and diabetic patients who easily develop infectious diseases are considered to account for the increasing percentage of patients who died of infectious diseases.

The leading cause of death among the entire dialysis patient population was cardiac failure, accounting for 24.0% of all the patients who died. The percentage of death from cardiac failure among all the patients who died decreased between 1990 and around 1996, and remained nearly constant afterwards. The second leading cause of death was infectious diseases, accounting for 18.9% of all the patients who died. The percentage of death from infectious diseases has tended to increase since 1990. These trends were similar to those observed for the causes of death of new patients begun on dialysis, which was mentioned above.

Following the causes of death mentioned above, the percentages of patients who died of cerebrovascular disorder and malignant tumors were high, at 8.9% and 9.2%, respectively. The percentage of patients who died of cerebrovascular disorder has

tended to decrease since 1994; moreover, the percentage of patients who died of cardiac infarction has also tended to decrease since 2002.

### 5. Annual crude death rate

The annual crude death rate was calculated from the facility survey data. It shows the percentage of the number of patients who died in a given year with respect to the mean annual number of dialysis patients. The annual crude death rate in 2007 was 9.4%. Table 14 shows the trend of annual crude death rates from 1983, which have ranged between 9.2–9.7% since 1992. Despite the increase in the numbers of diabetic patients, who have a low life expectancy, and elderly patients, the annual crude death rate remains nearly constant, which suggests an improvement in dialysis control technology in Japan.

### 6. Cumulative survival rate of new patients begun on dialysis each year

The cumulative survival rates of new patients begun on dialysis from 1983 are summarized by the year of introduction (Table 15). Moreover, the 1-, 5-, 10-, 15-, and 20-year survival rates of patients begun on dialysis are extracted from the table and plotted in

**TABLE 4.** Changes in the mean age of new patients begun on dialysis and in that of patients at the end of each year

| Year | Mean age of patients newly begun on dialysis treatment |      | Mean age of patients at the end of each year |      |
|------|--|------|--|------|
|      | Mean   | ±SD  | Mean   | ±SD  |
| 1983 | 51.9   | 15.5 | 48.3   | 13.8 |
| 1984 | 53.2   | 15.3 | 49.2   | 13.8 |
| 1985 | 54.4   | 15.4 | 50.3   | 13.7 |
| 1986 | 55.1   | 15.2 | 51.1   | 13.6 |
| 1987 | 55.9   | 14.9 | 52.1   | 13.7 |
| 1988 | 56.9   | 14.9 | 52.9   | 13.6 |
| 1989 | 57.4   | 14.7 | 53.8   | 13.5 |
| 1990 | 58.1   | 14.6 | 54.5   | 13.5 |
| 1991 | 58.1   | 14.6 | 55.3   | 13.5 |
| 1992 | 59.5   | 14.5 | 56.0   | 13.5 |
| 1993 | 59.8   | 14.4 | 56.6   | 13.5 |
| 1994 | 60.4   | 14.3 | 57.3   | 13.5 |
| 1995 | 61.0   | 14.2 | 58.0   | 13.4 |
| 1996 | 61.5   | 14.2 | 58.6   | 13.4 |
| 1997 | 62.2   | 14.0 | 59.2   | 13.4 |
| 1998 | 62.7   | 13.9 | 59.9   | 13.3 |
| 1999 | 63.4   | 13.9 | 60.6   | 13.3 |
| 2000 | 63.8   | 13.9 | 61.2   | 13.2 |
| 2001 | 64.2   | 13.7 | 61.6   | 13.1 |
| 2002 | 64.7   | 13.6 | 62.2   | 13.0 |
| 2003 | 65.4   | 13.5 | 62.8   | 12.9 |
| 2004 | 65.8   | 13.4 | 63.3   | 12.9 |
| 2005 | 66.2   | 13.4 | 63.9   | 12.8 |
| 2006 | 66.4   | 13.4 | 64.4   | 12.8 |
| 2007 | 66.8   | 13.3 | 64.9   | 12.7 |

**TABLE 5.** Number of new patients begun on dialysis in 2007 according to age and gender

| Age of the patients when newly begun on dialysis (years) | Male   | (%) <sup>†</sup> | Female | (%) <sup>†</sup> | Subtotal | (%) <sup>†</sup> | No information available | Total  | (%) <sup>†</sup> |
|--|--------|------------------|--------|------------------|----------|------------------|--------------------------|--------|------------------|
| <5   | 9      | (0.0)            | 10     | (0.1)            | 19       | (0.1)            | 0                        | 19     | (0.1)            |
| 5-9  | 6      | (0.0)            | 4      | (0.0)            | 10       | (0.0)            | 0                        | 10     | (0.0)            |
| 10-14  | 12     | (0.1)            | 6      | (0.0)            | 18       | (0.0)            | 0                        | 18     | (0.0)            |
| 15-19  | 20     | (0.1)            | 12     | (0.1)            | 32       | (0.1)            | 0                        | 32     | (0.1)            |
| 20-24  | 71     | (0.3)            | 34     | (0.3)            | 105      | (0.3)            | 0                        | 105    | (0.3)            |
| 25-29  | 120    | (0.5)            | 69     | (0.5)            | 189      | (0.5)            | 0                        | 189    | (0.5)            |
| 30-34  | 247    | (1.1)            | 123    | (1.0)            | 370      | (1.0)            | 0                        | 370    | (1.0)            |
| 35-39  | 464    | (2.0)            | 215    | (1.7)            | 679      | (1.9)            | 0                        | 679    | (1.9)            |
| 40-44  | 671    | (2.9)            | 253    | (2.0)            | 924      | (2.6)            | 0                        | 924    | (2.6)            |
| 45-49  | 989    | (4.2)            | 419    | (3.3)            | 1 408    | (3.9)            | 0                        | 1 408  | (3.9)            |
| 50-54  | 1 458  | (6.2)            | 611    | (4.8)            | 2 069    | (5.7)            | 0                        | 2 069  | (5.7)            |
| 55-59  | 2 819  | (12.0)           | 1 187  | (9.4)            | 4 006    | (11.1)           | 1                        | 4 007  | (11.1)           |
| 60-64  | 2 852  | (12.2)           | 1 272  | (10.0)           | 4 124    | (11.4)           | 3                        | 4 127  | (11.4)           |
| 65-69  | 3 281  | (14.0)           | 1 639  | (12.9)           | 4 920    | (13.6)           | 7                        | 4 927  | (13.7)           |
| 70-74  | 3 775  | (16.1)           | 1 947  | (15.4)           | 5 722    | (15.9)           | 2                        | 5 724  | (15.9)           |
| 75-79  | 3 372  | (14.4)           | 2 067  | (16.3)           | 5 439    | (15.1)           | 1                        | 5 440  | (15.1)           |
| 80-84  | 2 221  | (9.5)            | 1 671  | (13.2)           | 3 892    | (10.8)           | 0                        | 3 892  | (10.8)           |
| 85-89  | 832    | (3.6)            | 890    | (7.0)            | 1 722    | (4.8)            | 1                        | 1 723  | (4.8)            |
| 90-94  | 152    | (0.6)            | 216    | (1.7)            | 368      | (1.0)            | 0                        | 368    | (1.0)            |
| ≥95  | 26     | (0.1)            | 24     | (0.2)            | 50       | (0.1)            | 0                        | 50     | (0.1)            |
| Total  | 23 397 | (100.0)          | 12 669 | (100.0)          | 36 066   | (100.0)          | 15                       | 36 081 | (100.0)          |
| No information available                                 | 60     |                  | 32     |                  | 92       |                  |                          | 92     |                  |
| Total  | 23 457 |                  | 12 701 |                  | 36 158   |                  | 15                       | 36 173 |                  |
| Mean   | 65.84  |                  | 68.60  |                  | 66.81    |                  | 67.73                    | 66.81  |                  |
| SD   | 13.07  |                  | 13.55  |                  | 13.31    |                  | 7.40                     | 13.30  |                  |

<sup>†</sup>The value in parentheses on the right-hand side of each number is the percentage of patients with respect to the total of the column.

**TABLE 6.** Number of all dialysis patients in 2007 according to age and gender

| Age (years)              | Male    | (%) <sup>†</sup> | Female  | (%) <sup>†</sup> | Subtotal | (%) <sup>†</sup> | No information available | Total   | (%) <sup>†</sup> |
|--------------------------|---------|------------------|---------|------------------|----------|------------------|--------------------------|---------|------------------|
| <5                       | 21      | (0.0)            | 20      | (0.0)            | 41       | (0.0)            | 0                        | 41      | (0.0)            |
| 5-9                      | 18      | (0.0)            | 14      | (0.0)            | 32       | (0.0)            | 0                        | 32      | (0.0)            |
| 10-14                    | 19      | (0.0)            | 14      | (0.0)            | 33       | (0.0)            | 0                        | 33      | (0.0)            |
| 15-19                    | 77      | (0.0)            | 49      | (0.0)            | 126      | (0.0)            | 0                        | 126     | (0.0)            |
| 20-24                    | 291     | (0.2)            | 167     | (0.2)            | 458      | (0.2)            | 0                        | 458     | (0.2)            |
| 25-29                    | 713     | (0.4)            | 400     | (0.4)            | 1 113    | (0.4)            | 0                        | 1 113   | (0.4)            |
| 30-34                    | 1 859   | (1.1)            | 969     | (0.9)            | 2 828    | (1.1)            | 0                        | 2 828   | (1.1)            |
| 35-39                    | 3 575   | (2.2)            | 1 832   | (1.8)            | 5 407    | (2.0)            | 0                        | 5 407   | (2.0)            |
| 40-44                    | 5 400   | (3.3)            | 2 786   | (2.7)            | 8 186    | (3.1)            | 0                        | 8 186   | (3.1)            |
| 45-49                    | 7 783   | (4.8)            | 4 233   | (4.1)            | 12 016   | (4.5)            | 1                        | 12 017  | (4.5)            |
| 50-54                    | 12 364  | (7.6)            | 7 053   | (6.9)            | 19 417   | (7.3)            | 1                        | 19 418  | (7.3)            |
| 55-59                    | 22 862  | (14.1)           | 13 142  | (12.9)           | 36 004   | (13.6)           | 2                        | 36 006  | (13.6)           |
| 60-64                    | 23 361  | (14.4)           | 13 576  | (13.3)           | 36 937   | (14.0)           | 2                        | 36 939  | (14.0)           |
| 65-69                    | 24 719  | (15.2)           | 14 793  | (14.5)           | 39 512   | (14.9)           | 9                        | 39 521  | (15.0)           |
| 70-74                    | 24 225  | (14.9)           | 14 633  | (14.3)           | 38 858   | (14.7)           | 3                        | 38 861  | (14.7)           |
| 75-79                    | 18 799  | (11.6)           | 12 837  | (12.6)           | 31 636   | (12.0)           | 2                        | 31 638  | (12.0)           |
| 80-84                    | 10 874  | (6.7)            | 9 437   | (9.2)            | 20 311   | (7.7)            | 0                        | 20 311  | (7.7)            |
| 85-89                    | 4 115   | (2.5)            | 4 663   | (4.6)            | 8 778    | (3.3)            | 1                        | 8 779   | (3.3)            |
| 90-94                    | 1 005   | (0.6)            | 1 334   | (1.3)            | 2 339    | (0.9)            | 0                        | 2 339   | (0.9)            |
| ≥95                      | 139     | (0.1)            | 158     | (0.2)            | 297      | (0.1)            | 0                        | 297     | (0.1)            |
| Total                    | 162 219 | (100.0)          | 102 110 | (100.0)          | 264 329  | (100.0)          | 21                       | 264 350 | (100.0)          |
| No information available | 4       |                  | 2       |                  | 6        |                  |                          | 6       |                  |
| Total                    | 162 223 |                  | 102 112 |                  | 264 335  |                  | 21                       | 264 356 |                  |
| Mean                     | 64.16   |                  | 65.98   |                  | 64.87    |                  | 66.33                    | 64.87   |                  |
| SD                       | 12.52   |                  | 12.92   |                  | 12.71    |                  | 8.51                     | 12.71   |                  |

<sup>†</sup>The value in parentheses on the right-hand side of each number is the percentage of patients with respect to the total of the column.

**TABLE 7.** Number of new patients begun on dialysis in 2007 (and their mean ages) according to primary disease

| Primary disease   | Number of patients | (%) <sup>†</sup> | No information available | (%) <sup>†</sup> | Total  | (%) <sup>†</sup> | Mean age | SD    |
|---|--------------------|------------------|--------------------------|------------------|--------|------------------|----------|-------|
| Chronic glomerulonephritis                                | 8 561              | (23.8)           | 41                       | (45.1)           | 8 602  | (23.8)           | 66.45    | 14.31 |
| Chronic pyelonephritis                                    | 278                | (0.8)            | 2                        | (2.2)            | 280    | (0.8)            | 64.42    | 15.06 |
| Rapidly progressive glomerulonephritis                    | 468                | (1.3)            | 0                        | (0.0)            | 468    | (1.3)            | 69.99    | 14.30 |
| Nephropathy of pregnancy/pregnancy toxemia                | 68                 | (0.2)            | 0                        | (0.0)            | 68     | (0.2)            | 57.56    | 13.60 |
| Other nephritides that cannot be classified               | 148                | (0.4)            | 0                        | (0.0)            | 148    | (0.4)            | 61.32    | 20.35 |
| Polycystic kidney   | 827                | (2.3)            | 0                        | (0.0)            | 827    | (2.3)            | 61.31    | 13.41 |
| Nephrosclerosis   | 3 621              | (10.1)           | 5                        | (5.5)            | 3 626  | (10.0)           | 73.67    | 11.54 |
| Malignant hypertension                                    | 248                | (0.7)            | 0                        | (0.0)            | 248    | (0.7)            | 61.10    | 16.56 |
| Diabetic nephropathy                                      | 15 663             | (43.5)           | 18                       | (19.8)           | 15 681 | (43.4)           | 65.44    | 11.49 |
| Systemic lupus erythematosus nephritis                    | 302                | (0.8)            | 4                        | (4.4)            | 306    | (0.8)            | 60.50    | 15.67 |
| Amyloid kidney  | 170                | (0.5)            | 0                        | (0.0)            | 170    | (0.5)            | 68.20    | 9.28  |
| Gouty kidney  | 107                | (0.3)            | 1                        | (1.1)            | 108    | (0.3)            | 65.82    | 12.60 |
| Renal failure due to congenital abnormality of metabolism | 33                 | (0.1)            | 0                        | (0.0)            | 33     | (0.1)            | 47.24    | 21.85 |
| Kidney and urinary tract tuberculosis                     | 22                 | (0.1)            | 0                        | (0.0)            | 22     | (0.1)            | 72.23    | 9.95  |
| Kidney and urinary tract stone                            | 67                 | (0.2)            | 0                        | (0.0)            | 67     | (0.2)            | 68.36    | 12.52 |
| Kidney and urinary tract tumor                            | 162                | (0.4)            | 1                        | (1.1)            | 163    | (0.5)            | 70.96    | 11.82 |
| Obstructive urinary tract disease                         | 99                 | (0.3)            | 1                        | (1.1)            | 100    | (0.3)            | 66.89    | 16.22 |
| Myeloma   | 140                | (0.4)            | 0                        | (0.0)            | 140    | (0.4)            | 70.40    | 9.33  |
| Hypoplastic kidney  | 59                 | (0.2)            | 1                        | (1.1)            | 60     | (0.2)            | 35.14    | 27.81 |
| Undetermined  | 3 664              | (10.2)           | 9                        | (9.9)            | 3 673  | (10.2)           | 69.84    | 13.43 |
| Reintroduction after transplantation                      | 273                | (0.8)            | 4                        | (4.4)            | 277    | (0.8)            | 56.67    | 17.28 |
| Others  | 1 037              | (2.9)            | 4                        | (4.4)            | 1 041  | (2.9)            | 67.47    | 15.25 |
| Total   | 36 017             | (100.0)          | 91                       | (100.0)          | 36 108 | (100.0)          | 66.80    | 13.31 |
| No information available                                  | 64                 |                  | 1                        |                  | 65     |                  | 70.53    | 11.65 |
| Total   | 36 081             |                  | 92                       |                  | 36 173 |                  | 66.81    | 13.30 |

<sup>†</sup>The value in parentheses on the right-hand side of each number is the percentage of patients with respect to the total of the column.

Figure 2. The survival rates were calculated using a life table method (3).

The 1- to 10-year survival rates have been increasing since 1992 for patients begun on dialysis in 1992 or later. A significant change employed from around 1992 was the start of the clinical application of erythropoietin. This trend of increasing survival rate for the patients begun on dialysis after 1992 may be due to the improvement of anemia therapy using erythropoietin from the initial phase of dialysis.

The 15-year survival rate of patients begun on dialysis after 1992 is still unclear because only the data from the patients begun on dialysis before 1992 are used for calculating the 15-year survival rate. It will be interesting to determine whether the survival rates for 15 years and longer will also increase for the patients begun on dialysis after 1992.

## II. Tabulation of data on new items surveyed

### A. Current status of dialysate solution quality control

Following the previous survey, the surveyed items included the measurement frequency and endotoxin concentration in the dialysate solution, measurement frequency and bacterial count in the dialysate solu-

tion, the medium used for bacterial cultivation of dialysate solution, and the installation of endotoxin retentive filters (ETRFs). The amount of the sample for the measurement of bacterial count in the dialysate solution was also added to these items in the present survey.

### 1. Measurement of endotoxin concentration in dialysate solution

*a. Measurement frequency.* There were 3664 facilities that responded to questions regarding the measurement frequency of endotoxin concentration in the dialysate solution (Table 16). The endotoxin concentration in the dialysate solution was measured at 87.5% of the facilities that responded to the questionnaire, an increase of 5% from the percentage in the 2006 survey. According to the quality control standard by the Japanese Society for Dialysis Therapy, it is recommended that the endotoxin concentration in the dialysate solution be measured more than once a month; however, the percentage of facilities that carried out the measurement more than once a month was only 31.5%, indicating that compliance with the recommendation needs improvement.



**TABLE 8.** Number of all dialysis patients in 2007 (and their mean ages) according to primary disease

| Primary disease   | Number of patients | (%) <sup>†</sup> | No information available | (%) <sup>†</sup> | Total   | (%) <sup>†</sup> | Mean age | SD    |
|---|--------------------|------------------|--------------------------|------------------|---------|------------------|----------|-------|
| Chronic glomerulonephritis                                | 106 702            | (40.4)           | 2                        | (33.3)           | 106 704 | (40.4)           | 63.50    | 12.84 |
| Chronic pyelonephritis                                    | 3 138              | (1.2)            | 0                        | (0.0)            | 3 138   | (1.2)            | 62.83    | 14.26 |
| Rapidly progressive glomerulonephritis                    | 1 742              | (0.7)            | 0                        | (0.0)            | 1 742   | (0.7)            | 64.95    | 14.30 |
| Nephropathy of pregnancy/pregnancy toxemia                | 1 775              | (0.7)            | 0                        | (0.0)            | 1 775   | (0.7)            | 59.71    | 9.96  |
| Other nephritides that cannot be classified               | 1 214              | (0.5)            | 0                        | (0.0)            | 1 214   | (0.5)            | 58.05    | 17.03 |
| Polycystic kidney   | 8 920              | (3.4)            | 0                        | (0.0)            | 8 920   | (3.4)            | 62.93    | 11.03 |
| Nephrosclerosis   | 17 144             | (6.5)            | 0                        | (0.0)            | 17 144  | (6.5)            | 72.91    | 11.96 |
| Malignant hypertension                                    | 1 956              | (0.7)            | 0                        | (0.0)            | 1 956   | (0.7)            | 62.55    | 14.41 |
| Diabetic nephropathy                                      | 88 257             | (33.4)           | 1                        | (16.7)           | 88 258  | (33.4)           | 65.69    | 10.96 |
| Systemic lupus erythematosus nephritis                    | 2 261              | (0.9)            | 0                        | (0.0)            | 2 261   | (0.9)            | 56.85    | 13.77 |
| Amyloid kidney  | 513                | (0.2)            | 0                        | (0.0)            | 513     | (0.2)            | 65.47    | 11.26 |
| Gouty kidney  | 1 256              | (0.5)            | 1                        | (16.7)           | 1 257   | (0.5)            | 65.56    | 11.61 |
| Renal failure due to congenital abnormality of metabolism | 262                | (0.1)            | 0                        | (0.0)            | 262     | (0.1)            | 47.31    | 17.90 |
| Kidney and urinary tract tuberculosis                     | 392                | (0.1)            | 0                        | (0.0)            | 392     | (0.1)            | 69.59    | 9.68  |
| Kidney and urinary tract stone                            | 552                | (0.2)            | 0                        | (0.0)            | 552     | (0.2)            | 68.23    | 11.43 |
| Kidney and urinary tract tumor                            | 644                | (0.2)            | 0                        | (0.0)            | 644     | (0.2)            | 69.18    | 12.08 |
| Obstructive urinary tract disease                         | 692                | (0.3)            | 0                        | (0.0)            | 692     | (0.3)            | 60.76    | 18.23 |
| Myeloma   | 207                | (0.1)            | 0                        | (0.0)            | 207     | (0.1)            | 70.06    | 10.78 |
| Hypoplastic kidney  | 548                | (0.2)            | 0                        | (0.0)            | 548     | (0.2)            | 39.73    | 19.41 |
| Undetermined  | 19 451             | (7.4)            | 2                        | (33.3)           | 19 453  | (7.4)            | 67.14    | 13.42 |
| Reintroduction after transplantation                      | 1 894              | (0.7)            | 0                        | (0.0)            | 1 894   | (0.7)            | 52.98    | 12.79 |
| Others  | 4 725              | (1.8)            | 0                        | (0.0)            | 4 725   | (1.8)            | 62.66    | 16.11 |
| Total   | 264 245            | (100.0)          | 6                        | (100.0)          | 264 251 | (100.0)          | 64.87    | 12.71 |
| No information available                                  | 105                |                  | 0                        |                  | 105     |                  | 68.05    | 12.39 |
| Total   | 264 350            |                  | 6                        |                  | 264 356 |                  | 64.87    | 12.71 |

<sup>†</sup>The value in parentheses on the right-hand side of each number is the percentage of patients with respect to the total of the column.

*b. Dialysate solution endotoxin concentration.* Measured endotoxin concentrations in the dialysate solution were obtained from 3186 facilities (Table 17). The quality control standard of endotoxin concentra-

tion in the dialysate solution reported by the Japanese Society for Dialysis Therapy is <0.05 EU/mL. The percentage of facilities that satisfied this standard was 93.6%, an increase of approximately 5%

**TABLE 9.** Changes in the percentage of new patients begun on dialysis each year in terms of primary disease

| Year                                   | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Diabetic nephropathy                   | 15.6 | 17.4 | 19.6 | 21.3 | 22.1 | 24.3 | 26.5 | 26.2 | 28.1 | 28.4 | 29.9 | 30.7 | 31.9 |
| Chronic glomerulonephritis             | 60.5 | 58.7 | 56.0 | 54.8 | 54.2 | 49.9 | 47.4 | 46.1 | 44.2 | 42.2 | 41.4 | 40.5 | 39.4 |
| Nephrosclerosis                        | 3.0  | 3.3  | 3.5  | 3.7  | 3.9  | 3.9  | 4.1  | 5.4  | 5.5  | 5.9  | 6.2  | 6.1  | 6.3  |
| Polycystic kidney                      | 2.8  | 2.8  | 3.1  | 2.9  | 3.2  | 3.1  | 3.1  | 2.9  | 3.0  | 2.7  | 2.6  | 2.5  | 2.4  |
| Chronic pyelonephritis                 | 2.4  | 2.2  | 2.1  | 2.0  | 1.8  | 1.8  | 1.5  | 1.5  | 1.7  | 1.6  | 1.1  | 1.4  | 1.2  |
| Rapidly progressive glomerulonephritis | 0.9  | 0.7  | 0.9  | 1.0  | 0.8  | 0.9  | 0.8  | 0.7  | 0.6  | 0.7  | 0.8  | 0.8  | 0.8  |
| Systemic lupus erythematosus nephritis | 1.1  | 1.1  | 1.1  | 1.2  | 0.9  | 0.9  | 1.0  | 1.1  | 1.3  | 1.3  | 1.2  | 1.2  | 1.1  |
| Undetermined                           | 4.4  | 4.0  | 4.8  | 4.2  | 4.1  | 3.8  | 4.0  | 3.3  | 3.7  | 3.7  | 3.3  | 3.9  | 4.5  |
| Year                                   | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |      |
| Diabetic nephropathy                   | 33.1 | 33.9 | 35.7 | 36.2 | 36.6 | 38.1 | 39.1 | 41.0 | 41.3 | 42.0 | 42.9 | 43.4 |      |
| Chronic glomerulonephritis             | 38.9 | 36.6 | 35.0 | 33.6 | 32.5 | 32.4 | 31.9 | 29.1 | 28.1 | 27.4 | 25.6 | 23.8 |      |
| Nephrosclerosis                        | 6.4  | 6.8  | 6.7  | 7.0  | 7.6  | 7.6  | 7.8  | 8.5  | 8.8  | 9.0  | 9.4  | 10.0 |      |
| Polycystic kidney                      | 2.5  | 2.4  | 2.4  | 2.2  | 2.4  | 2.3  | 2.4  | 2.3  | 2.7  | 2.3  | 2.4  | 2.3  |      |
| Chronic pyelonephritis                 | 1.1  | 1.2  | 1.1  | 1.1  | 1.0  | 1.1  | 0.9  | 1.0  | 0.9  | 1.0  | 0.8  | 0.8  |      |
| Rapidly progressive glomerulonephritis | 0.8  | 1.1  | 0.9  | 0.9  | 1.0  | 1.0  | 1.1  | 1.2  | 1.1  | 1.1  | 1.2  | 1.3  |      |
| Systemic lupus erythematosus nephritis | 1.3  | 1.0  | 1.1  | 1.2  | 0.9  | 1.0  | 0.9  | 0.7  | 0.8  | 0.8  | 0.8  | 0.8  |      |
| Undetermined                           | 5.0  | 5.5  | 5.6  | 6.1  | 7.6  | 9.0  | 8.4  | 8.8  | 9.3  | 9.5  | 9.9  | 10.2 |      |

**TABLE 10.** Changes in the percentage of patients at the end of each year in terms of primary disease

| Year                                   | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Diabetic nephropathy                   | 7.4  | 8.4  | 9.4  | 10.5 | 11.7 | 12.8 | 14.0 | 14.9 | 16.4 | 17.1 | 18.2 | 19.2 | 20.4 |
| Chronic glomerulonephritis             | 74.5 | 72.1 | 72.3 | 70.6 | 69.4 | 67.9 | 65.9 | 64.1 | 61.7 | 60.4 | 58.8 | 57.7 | 56.6 |
| Nephrosclerosis                        | 1.5  | 1.7  | 1.9  | 2.0  | 2.1  | 2.1  | 2.3  | 2.6  | 2.9  | 3.1  | 3.4  | 3.6  | 3.8  |
| Polycystic kidney                      | 2.7  | 2.9  | 3.0  | 3.1  | 3.1  | 3.2  | 3.2  | 3.3  | 3.3  | 3.3  | 3.3  | 3.2  | 3.2  |
| Chronic pyelonephritis                 | 3.1  | 3.3  | 2.6  | 2.4  | 2.4  | 2.3  | 2.2  | 2.2  | 2.1  | 2.0  | 1.9  | 1.8  | 1.7  |
| Rapidly progressive glomerulonephritis | 0.5  | 0.4  | 0.5  | 0.5  | 0.5  | 0.5  | 0.5  | 0.5  | 0.5  | 0.5  | 0.5  | 0.5  | 0.5  |
| Systemic lupus erythematosus nephritis | 0.8  | 0.8  | 0.9  | 0.9  | 0.9  | 0.9  | 0.9  | 1.0  | 1.1  | 1.1  | 1.1  | 1.1  | 1.1  |
| Undetermined                           | 2.2  | 2.3  | 2.3  | 2.5  | 2.6  | 2.5  | 2.6  | 2.6  | 2.9  | 2.9  | 2.9  | 3.1  | 3.2  |
| Year                                   | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |      |
| Diabetic nephropathy                   | 21.6 | 22.7 | 24.0 | 25.1 | 26.0 | 27.2 | 28.1 | 29.2 | 30.2 | 31.4 | 32.3 | 33.4 |      |
| Chronic glomerulonephritis             | 55.4 | 54.1 | 52.5 | 51.1 | 49.7 | 49.6 | 48.2 | 46.6 | 45.1 | 43.6 | 42.2 | 40.4 |      |
| Nephrosclerosis                        | 4.0  | 4.2  | 4.4  | 4.5  | 4.8  | 5.0  | 5.1  | 5.3  | 5.7  | 5.9  | 6.2  | 6.5  |      |
| Polycystic kidney                      | 3.2  | 3.2  | 3.2  | 3.2  | 3.2  | 3.3  | 3.3  | 3.3  | 3.4  | 3.3  | 3.4  | 3.4  |      |
| Chronic pyelonephritis                 | 1.6  | 1.6  | 1.5  | 1.5  | 1.4  | 1.4  | 1.3  | 1.3  | 1.3  | 1.2  | 1.2  | 1.2  |      |
| Rapidly progressive glomerulonephritis | 0.5  | 0.6  | 0.6  | 0.6  | 0.6  | 0.6  | 0.6  | 0.6  | 0.6  | 0.6  | 0.6  | 0.7  |      |
| Systemic lupus erythematosus nephritis | 1.1  | 1.1  | 1.1  | 1.1  | 1.0  | 1.0  | 1.0  | 0.9  | 0.9  | 0.9  | 0.9  | 0.9  |      |
| Undetermined                           | 3.6  | 3.9  | 4.2  | 4.4  | 5.0  | 5.6  | 5.9  | 6.3  | 6.4  | 6.6  | 7.0  | 7.4  |      |

from that in the 2006 survey. The percentage of facilities that satisfied the endotoxin concentration of <0.001 EU/mL, which is required for an ultrapure dialysate solution, was 53.0%, a marked increase from 29.8% in the 2006 survey, showing a considerable improvement in solution cleanliness.

## 2. Bacterial test of dialysate solution

*a. Measurement frequency.* There were 3441 facilities that responded to questions regarding the frequency

of the bacterial test of the dialysate solution (Table 18). The test was carried out at 50.1% of these facilities, showing a marked increase from 37.1% at the end of 2006. In accordance with the quality control standard by the Japanese Society for Dialysis Therapy, it is recommended to measure the bacterial count in the dialysate solution more than once a month; however, the percentage of facilities that carried out the test more than once a month was only 16.9%, indicating the need to improve the practice of carrying out bacterial tests as a routine task.

**TABLE 11.** Classification of the causes of death of new patients begun on dialysis in 2007

| Cause of death                  | Male | (%)     | Female | (%)     | Total | (%)     | No information available |      |         |
|---------------------------------|------|---------|--------|---------|-------|---------|--------------------------|------|---------|
|                                 |      |         |        |         |       |         | Total                    | (%)  |         |
| Cardiac failure                 | 460  | (22.9)  | 260    | (23.9)  | 720   | (23.2)  | 0                        | 720  | (23.2)  |
| Cerebrovascular disease         | 102  | (5.1)   | 69     | (6.3)   | 171   | (5.5)   | 0                        | 171  | (5.5)   |
| Infectious disease              | 479  | (23.8)  | 270    | (24.8)  | 749   | (24.2)  | 0                        | 749  | (24.2)  |
| Hemorrhage                      | 59   | (2.9)   | 26     | (2.4)   | 85    | (2.7)   | 0                        | 85   | (2.7)   |
| Malignant tumor                 | 239  | (11.9)  | 80     | (7.3)   | 319   | (10.3)  | 0                        | 319  | (10.3)  |
| Cachexia/uremia                 | 62   | (3.1)   | 51     | (4.7)   | 113   | (3.6)   | 0                        | 113  | (3.6)   |
| Cardiac infarction              | 68   | (3.4)   | 42     | (3.9)   | 110   | (3.5)   | 0                        | 110  | (3.5)   |
| Potassium poisoning/moribund    | 55   | (2.7)   | 30     | (2.8)   | 85    | (2.7)   | 0                        | 85   | (2.7)   |
| Chronic hepatitis/cirrhosis     | 44   | (2.2)   | 10     | (0.9)   | 54    | (1.7)   | 0                        | 54   | (1.7)   |
| Encephalopathy                  | 2    | (0.1)   | 3      | (0.3)   | 5     | (0.2)   | 0                        | 5    | (0.2)   |
| Suicide/refusal of treatment    | 23   | (1.1)   | 6      | (0.6)   | 29    | (0.9)   | 0                        | 29   | (0.9)   |
| Intestinal obstruction          | 9    | (0.4)   | 13     | (1.2)   | 22    | (0.7)   | 0                        | 22   | (0.7)   |
| Lung thrombus/pulmonary embolus | 7    | (0.3)   | 2      | (0.2)   | 9     | (0.3)   | 0                        | 9    | (0.3)   |
| Death due to disaster           | 10   | (0.5)   | 2      | (0.2)   | 12    | (0.4)   | 0                        | 12   | (0.4)   |
| Others                          | 229  | (11.4)  | 117    | (10.7)  | 346   | (11.2)  | 0                        | 346  | (11.2)  |
| Undetermined                    | 162  | (8.1)   | 108    | (9.9)   | 270   | (8.7)   | 0                        | 270  | (8.7)   |
| Total                           | 2010 | (100.0) | 1089   | (100.0) | 3099  | (100.0) | 0                        | 3099 | (100.0) |
| No information available        |      |         | 1      |         | 1     |         | 0                        | 1    |         |
| Total                           | 2010 |         | 1090   |         | 3100  |         | 0                        | 3100 |         |

**TABLE 12.** Classification of the causes of death of patients who died in 2007

| Cause of death                  | Male   | (%)     | Female | (%)     | Total  | (%)     | No information available | Total  | (%)     |
|---------------------------------|--------|---------|--------|---------|--------|---------|--------------------------|--------|---------|
| Cardiac failure                 | 3 387  | (22.5)  | 2333   | (26.5)  | 5 720  | (24.0)  | 1                        | 5 721  | (24.0)  |
| Cerebrovascular disease         | 1 288  | (8.6)   | 841    | (9.6)   | 2 129  | (8.9)   | 0                        | 2 129  | (8.9)   |
| Infectious disease              | 2 879  | (19.1)  | 1637   | (18.6)  | 4 516  | (18.9)  | 1                        | 4 517  | (18.9)  |
| Hemorrhage                      | 304    | (2.0)   | 179    | (2.0)   | 483    | (2.0)   | 0                        | 483    | (2.0)   |
| Malignant tumor                 | 1 558  | (10.4)  | 626    | (7.1)   | 2 184  | (9.2)   | 0                        | 2 184  | (9.2)   |
| Cachexia/uremia                 | 430    | (2.9)   | 318    | (3.6)   | 748    | (3.1)   | 0                        | 748    | (3.1)   |
| Cardiac infarction              | 704    | (4.7)   | 344    | (3.9)   | 1 048  | (4.4)   | 0                        | 1 048  | (4.4)   |
| Potassium poisoning/moribund    | 809    | (5.4)   | 394    | (4.5)   | 1 203  | (5.0)   | 0                        | 1 203  | (5.0)   |
| Chronic hepatitis/cirrhosis     | 209    | (1.4)   | 82     | (0.9)   | 291    | (1.2)   | 0                        | 291    | (1.2)   |
| Encephalopathy                  | 12     | (0.1)   | 10     | (0.1)   | 22     | (0.1)   | 0                        | 22     | (0.1)   |
| Suicide/refusal of treatment    | 154    | (1.0)   | 58     | (0.7)   | 212    | (0.9)   | 0                        | 212    | (0.9)   |
| Intestinal obstruction          | 144    | (1.0)   | 100    | (1.1)   | 244    | (1.0)   | 0                        | 244    | (1.0)   |
| Lung thrombus/pulmonary embolus | 44     | (0.3)   | 38     | (0.4)   | 82     | (0.3)   | 0                        | 82     | (0.3)   |
| Death due to disaster           | 120    | (0.8)   | 56     | (0.6)   | 176    | (0.7)   | 0                        | 176    | (0.7)   |
| Others                          | 1 428  | (9.5)   | 888    | (10.1)  | 2 316  | (9.7)   | 0                        | 2 316  | (9.7)   |
| Undetermined                    | 1 576  | (10.5)  | 885    | (10.1)  | 2 461  | (10.3)  | 3                        | 2 464  | (10.3)  |
| Total                           | 15 046 | (100.0) | 8789   | (100.0) | 23 835 | (100.0) | 5                        | 23 840 | (100.0) |
| No information available        | 20     |         | 8      |         | 28     |         | 0                        | 28     |         |
| Total                           | 15 066 |         | 8797   |         | 23 863 |         | 5                        | 23 868 |         |

*b. Dialysate solution bacterial count.* Measured bacterial counts in the dialysate solution were reported by 1565 facilities, 97.4% of which satisfied the quality control standard by the Japanese Society for Dialysis Therapy, which is <100 cfu/mL (Table 19). The percentage of facilities that satisfied the ultrapure dialysate solution level of <0.1 cfu/mL was 47.9%.

*c. Medium used for bacterial cultivation of the dialysate solution.* The use of an oligotrophic medium is recommended for the cultivation of bacteria in the dialysate solution. According to the survey result, an oligotrophic medium of Reasoner's No 2 agar (R2A) or tryptone glucose extract agar (TGEA)

was used at 73.4% of the facilities. The percentage of facilities that used R2A was the highest at 66.3% (Table 20).

*d. Amount of sample for the measurement of the dialysate solution bacterial count.* Generally, the amount of a sample used to measure the bacterial count in plate media was <1 mL; however, at least 10 mL of a sample is required to accurately measure a bacterial count of <0.1 cfu/mL in the dialysate solution, which is the count required to maintain an ultrapure dialysate solution. From the survey, the amount of the sample dialysate solution was 10 mL or more in 46.5% of the facilities (Table 21).

**TABLE 13.** Annual changes in the major causes of death

| Year                    | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 |
|-------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Cardiac failure         | 30.3 | 30.5 | 31.3 | 33.2 | 32.7 | 36.5 | 33.4 | 30.4 | 30.5 | 31.1 | 29.9 | 28.2 | 25.4 |
| Infectious disease      | 11.0 | 11.5 | 11.5 | 12.0 | 12.0 | 12.2 | 11.7 | 11.6 | 12.1 | 11.3 | 12.2 | 12.6 | 13.8 |
| Cerebrovascular disease | 14.2 | 15.4 | 14.2 | 14.0 | 14.2 | 12.9 | 13.2 | 13.9 | 13.7 | 13.6 | 13.5 | 14.1 | 13.5 |
| Malignant tumor         | 7.7  | 6.9  | 6.4  | 6.9  | 5.8  | 6.9  | 7.6  | 8.2  | 7.6  | 7.1  | 7.4  | 7.3  | 7.2  |
| Cardiac infarction      | 5.3  | 4.8  | 5.3  | 6.1  | 6.0  | 5.4  | 5.3  | 5.8  | 5.8  | 5.8  | 5.7  | 7.1  | 7.5  |
| Others                  | 5.1  | 4.9  | 5.7  | 4.7  | 5.2  | 4.8  | 4.4  | 4.6  | 4.4  | 4.5  | 4.1  | 4.5  | 5.8  |
| Year                    | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |      |
| Cardiac failure         | 24.1 | 23.9 | 24.1 | 24.3 | 23.2 | 25.5 | 25.1 | 25.0 | 25.1 | 25.8 | 24.9 | 24.0 |      |
| Infectious disease      | 14.6 | 14.9 | 15.0 | 16.3 | 16.6 | 16.3 | 15.9 | 18.5 | 18.8 | 19.2 | 19.9 | 18.9 |      |
| Cerebrovascular disease | 12.9 | 12.6 | 12.1 | 11.3 | 11.3 | 11.6 | 11.2 | 10.7 | 10.6 | 9.8  | 9.4  | 8.9  |      |
| Malignant tumor         | 7.7  | 8.1  | 7.7  | 7.6  | 8.3  | 8.5  | 8.5  | 8.5  | 9.0  | 9.0  | 9.2  | 9.2  |      |
| Cardiac infarction      | 7.4  | 8.4  | 7.9  | 7.4  | 7.0  | 7.4  | 7.4  | 6.2  | 5.4  | 5.1  | 4.4  | 4.4  |      |
| Others                  | 6.3  | 6.7  | 7.0  | 7.7  | 7.9  | 9.1  | 9.0  | 9.7  | 10.3 | 9.1  | 9.5  | 9.7  |      |

**TABLE 14.** Change in the annual crude death rate

| Year | Crude death rate (%) | Year | Crude death rate (%) |
|------|----------------------|------|----------------------|
| 1983 | 9.0                  | 1996 | 9.4                  |
| 1984 | 8.9                  | 1997 | 9.4                  |
| 1985 | 9.1                  | 1998 | 9.2                  |
| 1986 | 9.0                  | 1999 | 9.7                  |
| 1987 | 8.5                  | 2000 | 9.2                  |
| 1988 | 9.2                  | 2001 | 9.3                  |
| 1989 | 7.9                  | 2002 | 9.2                  |
| 1990 | 9.6                  | 2003 | 9.3                  |
| 1991 | 8.9                  | 2004 | 9.4                  |
| 1992 | 9.7                  | 2005 | 9.5                  |
| 1993 | 9.4                  | 2006 | 9.2                  |
| 1994 | 9.5                  | 2007 | 9.4                  |
| 1995 | 9.7                  |      |                      |

## B. Current status of hepatitis virus infection

### 1. Hepatitis C virus antibody prevalence

The hepatitis C virus antibody (HCVAb) prevalence was calculated using the following equation:

$$\text{HCVAb prevalence (\%)} = \frac{\text{Number of HCVAb-positive patients}}{\text{Number of HCVAb-positive patients} + \text{Number of HCVAb-negative patients}}$$

In this equation, HCV-RNA was not taken into consideration.

*a. Changes over the past eight years.* The HCVAb prevalence of chronic dialysis patients at the end of each year was summarized on the basis of the results of the survey by the Statistical Survey Committee (4–9). The HCVAb prevalence decreased yearly from 15.95% in 1999 to <10% at the end of 2007 (9.83%; Table 22). The previous activities carried out to prevent in-hospital infection from 1999 until today include the publication of the “Manual for prevention of in-hospital infection in dialysis therapy (initial version)” (10) in 1999, the start of the sale of erythropoietin-pre-filled syringes in 2001, and the publication of the “Manual for prevention of in-hospital infection in dialysis therapy (revised version)” (11) in 2006.

*b. Treatment method.* Table 23 shows the relationship between HCVAb prevalence and the treatment method. The HCVAb prevalence in patients treated by hemoabsorption was the highest, followed by those in patients treated by hemodiafiltration and home hemodialysis. As explained later, patients with a longer dialysis duration showed a higher HCVAb prevalence. The duration of dialysis in patients treated by the above methods was long and thereby

considered to account for the high HCVAb prevalence (the mean durations of dialysis for patients treated by different methods obtained from this survey are:  $6.46 \pm 6.57$  ( $\pm$ SD) years for facility hemodialysis,  $11.45 \pm 9.03$  years for hemodiafiltration,  $6.06 \pm 6.77$  years for hemofiltration,  $24.68 \pm 6.59$  years for hemoabsorption,  $12.42 \pm 9.38$  years for home hemodialysis, and  $3.54 \pm 4.17$  years for peritoneal dialysis). The HCVAb prevalence in patients treated by peritoneal dialysis was lower than that in patients treated by facility hemodialysis, which was probably because the duration of dialysis was short in patients treated by peritoneal dialysis. These trends were almost similar to those in the 2006 survey.

*c. Gender.* Table 24 shows the relationship between HCVAb prevalence and gender. The HCVAb prevalence in male patients was higher than that in female patients.

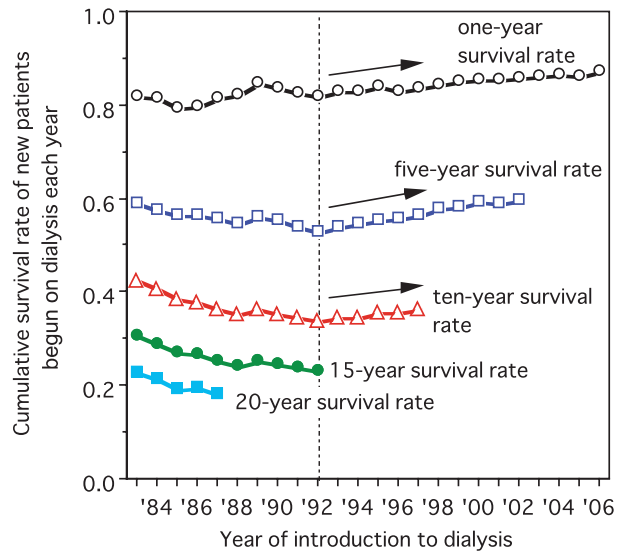
*d. Duration of dialysis.* Table 25 shows the relationship between HCVAb prevalence and the duration of dialysis. Before reaching the duration of 15 years, the HCVAb prevalence was approximately 7.7% and showed no particular relationship with the duration of dialysis; however, the HCVAb prevalence tended to increase when the duration of dialysis was 15 years or longer, and it markedly increased with increasing dialysis duration of >20 years. The HCV virus was first detected and HCVAb tests therefore performed in the clinical setting about 20 years ago, which may account for the increase in HCVAb prevalence in patients who have undergone dialysis for 20 years or longer.

*e. Age.* Table 26 shows the relationship between HCVAb prevalence and age. The HCVAb prevalence was relatively high in the 45–89 age group, whereas that in patients outside this age group, younger or older, was low. This age group includes many patients with a relatively long duration of dialysis, which may account for such a high HCVAb prevalence.

*f. Primary disease.* Table 27 shows the relationship between HCVAb prevalence and primary disease. To easily understand HCVAb prevalence in relation to the primary disease, the primary diseases are listed in descending order of HCVAb prevalence. The HCVAb prevalence in patients who had been reintroduced to dialysis after transplantation and who had renal or urinary tract tuberculosis as the primary

TABLE 15. Survival rates of new patients begun on dialysis since 1983

| Year when patients were newly introduced to dialysis | Number of patients | 1-year survival rate | 2-year survival rate | 3-year survival rate | 4-year survival rate | 5-year survival rate | 6-year survival rate | 7-year survival rate | 8-year survival rate | 9-year survival rate | 10-year survival rate | 11-year survival rate | 12-year survival rate | 13-year survival rate | 14-year survival rate | 15-year survival rate | 16-year survival rate | 17-year survival rate | 18-year survival rate | 19-year survival rate | 20-year survival rate | 21-year survival rate | 22-year survival rate | 23-year survival rate | 24-year survival rate |
|--|--------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1983   | 9923               | 0.819                | 0.748                | 0.683                | 0.634                | 0.590                | 0.557                | 0.525                | 0.486                | 0.457                | 0.426                 | 0.397                 | 0.373                 | 0.349                 | 0.330                 | 0.309                 | 0.290                 | 0.274                 | 0.257                 | 0.244                 | 0.229                 | 0.216                 | 0.202                 | 0.191                 | 0.181                 |
| 1984   | 10 764             | 0.818                | 0.736                | 0.671                | 0.621                | 0.578                | 0.539                | 0.500                | 0.467                | 0.437                | 0.409                 | 0.380                 | 0.355                 | 0.331                 | 0.310                 | 0.290                 | 0.273                 | 0.255                 | 0.241                 | 0.229                 | 0.214                 | 0.201                 | 0.191                 | 0.182                 |                       |
| 1985   | 11 676             | 0.796                | 0.721                | 0.662                | 0.611                | 0.565                | 0.523                | 0.487                | 0.447                | 0.416                | 0.388                 | 0.363                 | 0.339                 | 0.314                 | 0.292                 | 0.274                 | 0.256                 | 0.239                 | 0.224                 | 0.211                 | 0.195                 | 0.183                 | 0.172                 |                       |                       |
| 1986   | 12 676             | 0.799                | 0.725                | 0.667                | 0.619                | 0.566                | 0.521                | 0.480                | 0.446                | 0.410                | 0.380                 | 0.353                 | 0.329                 | 0.307                 | 0.286                 | 0.269                 | 0.252                 | 0.235                 | 0.222                 | 0.210                 | 0.198                 | 0.185                 |                       |                       |                       |
| 1987   | 13 618             | 0.816                | 0.739                | 0.673                | 0.609                | 0.558                | 0.509                | 0.464                | 0.428                | 0.396                | 0.367                 | 0.341                 | 0.317                 | 0.296                 | 0.274                 | 0.256                 | 0.241                 | 0.223                 | 0.206                 | 0.193                 | 0.183                 |                       |                       |                       |                       |
| 1988   | 14 828             | 0.825                | 0.741                | 0.668                | 0.605                | 0.549                | 0.501                | 0.458                | 0.421                | 0.386                | 0.355                 | 0.329                 | 0.305                 | 0.283                 | 0.262                 | 0.244                 | 0.227                 | 0.213                 | 0.198                 | 0.188                 |                       |                       |                       |                       |                       |
| 1989   | 14 663             | 0.850                | 0.762                | 0.689                | 0.620                | 0.564                | 0.515                | 0.470                | 0.431                | 0.396                | 0.364                 | 0.338                 | 0.313                 | 0.291                 | 0.271                 | 0.253                 | 0.237                 | 0.221                 | 0.208                 |                       |                       |                       |                       |                       |                       |
| 1990   | 16 600             | 0.839                | 0.750                | 0.675                | 0.610                | 0.556                | 0.503                | 0.461                | 0.421                | 0.386                | 0.355                 | 0.327                 | 0.302                 | 0.280                 | 0.263                 | 0.246                 | 0.230                 | 0.213                 |                       |                       |                       |                       |                       |                       |                       |
| 1991   | 18 305             | 0.829                | 0.736                | 0.663                | 0.599                | 0.540                | 0.489                | 0.446                | 0.408                | 0.377                | 0.347                 | 0.320                 | 0.295                 | 0.275                 | 0.256                 | 0.239                 | 0.223                 |                       |                       |                       |                       |                       |                       |                       |                       |
| 1992   | 19 991             | 0.822                | 0.728                | 0.652                | 0.589                | 0.532                | 0.484                | 0.440                | 0.402                | 0.370                | 0.342                 | 0.317                 | 0.293                 | 0.273                 | 0.252                 | 0.234                 |                       |                       |                       |                       |                       |                       |                       |                       |                       |
| 1993   | 20 990             | 0.833                | 0.743                | 0.667                | 0.599                | 0.543                | 0.492                | 0.448                | 0.410                | 0.377                | 0.347                 | 0.320                 | 0.296                 | 0.273                 | 0.252                 |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |
| 1994   | 21 548             | 0.831                | 0.745                | 0.672                | 0.606                | 0.547                | 0.495                | 0.452                | 0.414                | 0.378                | 0.347                 | 0.318                 | 0.295                 | 0.273                 |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |
| 1995   | 23 053             | 0.842                | 0.755                | 0.682                | 0.613                | 0.556                | 0.508                | 0.465                | 0.426                | 0.391                | 0.359                 | 0.330                 | 0.306                 |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |
| 1996   | 25 109             | 0.833                | 0.751                | 0.676                | 0.613                | 0.559                | 0.512                | 0.462                | 0.424                | 0.389                | 0.357                 | 0.329                 |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |
| 1997   | 25 780             | 0.840                | 0.754                | 0.684                | 0.624                | 0.567                | 0.518                | 0.474                | 0.431                | 0.396                | 0.364                 |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |
| 1998   | 27 073             | 0.846                | 0.767                | 0.701                | 0.640                | 0.579                | 0.529                | 0.481                | 0.440                | 0.405                |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |
| 1999   | 28 094             | 0.852                | 0.775                | 0.709                | 0.643                | 0.586                | 0.534                | 0.488                | 0.448                |                      |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |
| 2000   | 29 619             | 0.858                | 0.780                | 0.714                | 0.652                | 0.596                | 0.543                | 0.497                |                      |                      |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |
| 2001   | 31 344             | 0.857                | 0.778                | 0.710                | 0.646                | 0.592                | 0.541                |                      |                      |                      |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |
| 2002   | 32 107             | 0.861                | 0.784                | 0.718                | 0.657                | 0.598                |                      |                      |                      |                      |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |
| 2003   | 33 269             | 0.863                | 0.787                | 0.721                | 0.660                |                      |                      |                      |                      |                      |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |
| 2004   | 34 474             | 0.869                | 0.793                | 0.729                |                      |                      |                      |                      |                      |                      |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |
| 2005   | 35 594             | 0.865                | 0.792                |                      |                      |                      |                      |                      |                      |                      |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |
| 2006   | 36 629             | 0.874                |                      |                      |                      |                      |                      |                      |                      |                      |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |



**FIG. 2.** Changes in the cumulative survival rate of patients begun on dialysis.

disease were 20% or higher. In contrast, the HCVAb prevalence in patients with myeloma as the primary disease was as low as 4.52%. The HCVAb prevalence in patients with other primary diseases ranged between 6% and 13%, showing a continuous distribution without a marked difference.

The HCVAb prevalence in patients with chronic glomerulonephritis as the primary disease, the number of which is largest among all the patients, was 10.35%, and that in patients with diabetic nephropathy, which is the second largest in number, was 10.29%; these prevalences were not significantly different. For the third largest number of patients with nephrosclerosis as the primary disease, the HCVAb prevalence was 6.89% and lower than that for the patients with the two above-mentioned primary diseases.

## 2. Hepatitis B virus surface antigen prevalence

The hepatitis B virus surface antigen (HBsAg) prevalence was calculated using the following equation:

$$\text{HBsAg prevalence (\%)} = \frac{\text{Number of HBsAg-positive patients}}{\text{Number of HBsAg-positive patients} + \text{Number of HBsAg-negative patients}}$$

The mean HBsAg prevalence of all the patients surveyed in this study was 1.94%.

*a. Treatment method.* Table 28 shows the relationship between HBsAg prevalence and treatment method. The HBsAg prevalence in patients treated by hemoabsorption was as high as 3.69%, whereas

those in patients treated by hemofiltration and peritoneal dialysis were slightly low (approximately 1.5%). Following these treatment methods, the HBsAg prevalence in patients treated by home hemodialysis was as low as 1.71%. The HBsAg prevalence in patients treated by hemodialysis and hemodiafiltration were nearly equal to the mean in all the dialysis patients.

*b. Gender.* Table 29 shows the relationship between HBsAg prevalence and gender. Similarly to HCVAb prevalence, the HBsAg prevalence was higher in male patients than in female patients.

*c. Duration of dialysis.* Table 30 shows the relationship between HBsAg prevalence and duration of dialysis. For the patients with the duration longer than 10 years, the HBsAg prevalence tended to increase with increasing duration of dialysis.

*d. Age.* Table 31 shows the relationship between HBsAg prevalence and age. The HBsAg prevalence was high in patients in the 45–74 age group, whereas that in patients outside this age group, that is, younger or older patients, was low.

*e. Primary disease.* Table 32 shows the relationship between HBsAg prevalence and primary disease. To easily understand the relationship between them, primary diseases are listed in the descending order of HBsAg prevalence. From this list, the primary diseases with HBsAg prevalence are renal or urinary tract tuberculosis and nephropathy of pregnancy or pregnancy toxemia, whereas those with low HBsAg prevalence include renal or urinary tract calculosis, rapidly progressive glomerulonephritis, and amyloid nephropathy.

The HBsAg prevalence in patients with chronic glomerulonephritis as the primary disease, whose number was largest among all the patients, was 2.08%. That in patients with diabetic nephropathy, whose number was the second largest, was 1.85%.

## C. Current status of renal anemia therapy

In the survey conducted at the end of 2007, hemoglobin concentration, serum iron concentration, total iron-binding capacity, and serum ferritin concentration (all of these are pre-dialysis values) were investigated as indices regarding renal anemia therapy. The relationships between hemoglobin concentration and other related indices are reported below.

**TABLE 16.** Measurement frequency of the dialysate solution endotoxin concentration (according to the type of facility)

| Kind of facility                           | Measurement frequency of endotoxin concentration |           |            |                 |             |                        |             |              |             |                          | Subtotal | Unspecified | No information available | Total |
|--|--|-----------|------------|-----------------|-------------|------------------------|-------------|--------------|-------------|--------------------------|----------|-------------|--------------------------|-------|
|  | None   | Every day | Every week | Every two weeks | Every month | Several times per year | Once a year | Subtotal     | Unspecified | No information available |          |             |                          |       |
| National public university hospital (%)    | 2 (4.2)  | 0 (0.0)   | 0 (0.0)    | 1 (2.1)         | 17 (35.4)   | 23 (47.9)              | 5 (10.4)    | 48 (100.0)   | 1           | 2                        | 51       |             |                          |       |
| Private university hospital (%)            | 6 (10.3)   | 0 (0.0)   | 1 (1.7)    | 6 (10.3)        | 23 (39.7)   | 20 (34.5)              | 2 (3.4)     | 58 (100.0)   | 3           | 1                        | 62       |             |                          |       |
| National hospital (%)                      | 4 (13.8)   | 0 (0.0)   | 1 (3.4)    | 0 (0.0)         | 5 (17.2)    | 13 (44.8)              | 6 (20.7)    | 29 (100.0)   | 5           | 6                        | 40       |             |                          |       |
| Prefectural municipal village hospital (%) | 48 (12.5)  | 1 (0.3)   | 2 (0.5)    | 7 (1.8)         | 88 (23.0)   | 173 (45.2)             | 64 (16.7)   | 383 (100.0)  | 32          | 22                       | 437      |             |                          |       |
| Social insurance hospital (%)              | 7 (11.7)   | 0 (0.0)   | 0 (0.0)    | 3 (5.0)         | 13 (21.7)   | 27 (45.0)              | 10 (16.7)   | 60 (100.0)   | 2           | 1                        | 63       |             |                          |       |
| -Kouseiren** hospital (%)                  | 5 (4.5)  | 0 (0.0)   | 1 (0.9)    | 6 (5.4)         | 28 (25.2)   | 48 (43.2)              | 23 (20.7)   | 111 (100.0)  | 5           | 3                        | 119      |             |                          |       |
| Other public hospital (%)                  | 21 (12.1)  | 1 (0.6)   | 5 (2.9)    | 7 (4.0)         | 43 (24.7)   | 67 (38.5)              | 30 (17.2)   | 174 (100.0)  | 4           | 6                        | 184      |             |                          |       |
| Private general hospital (%)               | 12 (12.1)  | 1 (1.0)   | 2 (2.0)    | 5 (5.1)         | 25 (25.3)   | 42 (42.4)              | 14 (14.1)   | 99 (100.0)   | 8           | 1                        | 108      |             |                          |       |
| Private hospital (%)                       | 138 (13.6)                                       | 6 (0.6)   | 26 (2.6)   | 46 (4.5)        | 234 (23.1)  | 386 (38.2)             | 175 (17.3)  | 1011 (100.0) | 57          | 44                       | 1112     |             |                          |       |
| Private clinic (%)                         | 216 (12.8)                                       | 12 (0.7)  | 45 (2.7)   | 128 (7.6)       | 366 (21.6)  | 658 (38.9)             | 266 (15.7)  | 1691 (100.0) | 92          | 93                       | 1876     |             |                          |       |
| Total (%)                                  | 459 (12.5)                                       | 21 (0.6)  | 81 (2.2)   | 209 (5.7)       | 842 (23.0)  | 1457 (39.8)            | 595 (16.2)  | 3664 (100.0) | 209         | 179                      | 4052     |             |                          |       |

\*Kouseiren: a welfare association belonging to agricultural cooperative associations.

**TABLE 17.** Dialysate solution endotoxin concentrations (according to the type of facility)

| Kind of facility                           | Dialysate solution endotoxin concentration (EU/mL) |             |             |             |             |             |          | Subtotal     | Unspecified | No information available | Total |
|--|--|-------------|-------------|-------------|-------------|-------------|----------|--------------|-------------|--------------------------|-------|
|  | <0.001   | 0.001-0.009 | 0.010-0.049 | 0.050-0.099 | 0.100-0.249 | 0.250-0.499 | ≥0.500   |              |             |                          |       |
| National public university hospital (%)    | 30 (66.7)  | 10 (22.2)   | 4 (8.9)     | 1 (2.2)     | 0 (0.0)     | 0 (0.0)     | 0 (0.0)  | 45 (100.0)   | 2           | 4                        | 51    |
| Private university hospital (%)            | 24 (46.2)  | 17 (32.7)   | 10 (19.2)   | 0 (0.0)     | 1 (1.9)     | 0 (0.0)     | 0 (0.0)  | 52 (100.0)   | 3           | 7                        | 62    |
| National hospital (%)                      | 14 (53.8)  | 7 (26.9)    | 4 (15.4)    | 0 (0.0)     | 1 (3.8)     | 0 (0.0)     | 0 (0.0)  | 26 (100.0)   | 5           | 9                        | 40    |
| Prefectural municipal village hospital (%) | 197 (58.1)   | 87 (25.7)   | 42 (12.4)   | 6 (1.8)     | 2 (0.6)     | 2 (0.6)     | 3 (0.9)  | 339 (100.0)  | 26          | 72                       | 437   |
| Social insurance hospital (%)              | 25 (48.1)  | 17 (32.7)   | 7 (13.5)    | 3 (5.8)     | 0 (0.0)     | 0 (0.0)     | 0 (0.0)  | 52 (100.0)   | 3           | 8                        | 63    |
| -Kouseiren** hospital (%)                  | 53 (50.5)  | 30 (28.6)   | 13 (12.4)   | 4 (3.8)     | 2 (1.9)     | 1 (1.0)     | 2 (1.9)  | 105 (100.0)  | 6           | 8                        | 119   |
| Other public hospital (%)                  | 89 (58.6)  | 43 (28.3)   | 15 (9.9)    | 4 (2.6)     | 1 (0.7)     | 0 (0.0)     | 0 (0.0)  | 152 (100.0)  | 5           | 27                       | 184   |
| Private general hospital (%)               | 44 (50.6)  | 24 (27.6)   | 13 (14.9)   | 3 (3.4)     | 2 (2.3)     | 1 (1.1)     | 0 (0.0)  | 87 (100.0)   | 7           | 14                       | 108   |
| Private hospital (%)                       | 423 (48.7)   | 231 (26.6)  | 140 (16.1)  | 36 (4.1)    | 26 (3.0)    | 8 (0.9)     | 4 (0.5)  | 868 (100.0)  | 60          | 184                      | 1112  |
| Private clinic (%)                         | 789 (54.0)   | 399 (27.3)  | 182 (12.5)  | 50 (3.4)    | 28 (1.9)    | 9 (0.6)     | 3 (0.2)  | 1460 (100.0) | 98          | 318                      | 1876  |
| Total (%)                                  | 1688 (53.0)  | 865 (27.2)  | 430 (13.5)  | 107 (3.4)   | 63 (2.0)    | 21 (0.7)    | 12 (0.4) | 3186 (100.0) | 215         | 651                      | 4052  |

\*Kouseiren: a welfare association belonging to agricultural cooperative associations.

**TABLE 18.** Measurement frequency of the dialysate solution bacterial count (according to the type of facility)

| Kind of facility                           | Measurement frequency of the dialysate solution bacterial count |           |            |                 |             |                        |             |              |             |             | Subtotal | Unspecified | No information available | Total |
|--|---|-----------|------------|-----------------|-------------|------------------------|-------------|--------------|-------------|-------------|----------|-------------|--------------------------|-------|
|  | None  | Every day | Every week | Every two weeks | Every month | Several times per year | Once a year | Once a year  | Once a year | Once a year |          |             |                          |       |
| National public university hospital (%)    | 21 (45.7)   | 0 (0.0)   | 0 (0.0)    | 0 (0.0)         | 9 (19.6)    | 15 (32.6)              | 1 (2.2)     | 46 (100.0)   | 3           | 2           | 51       |             |                          |       |
| Private university hospital (%)            | 18 (34.6)   | 0 (0.0)   | 1 (1.9)    | 3 (5.8)         | 8 (15.4)    | 19 (36.5)              | 3 (5.8)     | 52 (100.0)   | 9           | 1           | 62       |             |                          |       |
| National hospital (%)                      | 19 (63.3)   | 0 (0.0)   | 0 (0.0)    | 1 (3.3)         | 1 (3.3)     | 5 (16.7)               | 4 (13.3)    | 30 (100.0)   | 4           | 6           | 40       |             |                          |       |
| Prefectural municipal village hospital (%) | 199 (54.8)  | 1 (0.3)   | 1 (0.3)    | 2 (0.6)         | 45 (12.4)   | 76 (20.9)              | 39 (10.7)   | 363 (100.0)  | 48          | 26          | 437      |             |                          |       |
| Social insurance hospital (%)              | 25 (45.5)   | 0 (0.0)   | 2 (3.6)    | 0 (0.0)         | 6 (10.9)    | 17 (30.9)              | 5 (9.1)     | 55 (100.0)   | 7           | 1           | 63       |             |                          |       |
| *Kouseiren** hospital (%)                  | 40 (40.0)   | 0 (0.0)   | 0 (0.0)    | 2 (2.0)         | 18 (18.0)   | 27 (27.0)              | 13 (13.0)   | 100 (100.0)  | 16          | 3           | 119      |             |                          |       |
| Other public hospital (%)                  | 84 (50.0)   | 0 (0.0)   | 2 (1.2)    | 3 (1.8)         | 28 (16.7)   | 31 (18.5)              | 20 (11.9)   | 168 (100.0)  | 8           | 8           | 184      |             |                          |       |
| Private general hospital (%)               | 60 (63.2)   | 2 (2.1)   | 0 (0.0)    | 2 (2.1)         | 14 (14.7)   | 10 (10.5)              | 7 (7.4)     | 95 (100.0)   | 12          | 1           | 108      |             |                          |       |
| Private hospital (%)                       | 462 (49.4)  | 4 (0.4)   | 14 (1.5)   | 21 (2.2)        | 130 (13.9)  | 180 (19.3)             | 124 (13.3)  | 935 (100.0)  | 129         | 48          | 1112     |             |                          |       |
| Private clinic (%)                         | 788 (49.3)  | 3 (0.2)   | 13 (0.8)   | 64 (4.0)        | 180 (11.3)  | 361 (22.6)             | 188 (11.8)  | 1597 (100.0) | 176         | 103         | 1876     |             |                          |       |
| Total (%)                                  | 1716 (49.9)   | 10 (0.3)  | 33 (1.0)   | 98 (2.8)        | 439 (12.8)  | 741 (21.5)             | 404 (11.7)  | 3441 (100.0) | 412         | 199         | 4052     |             |                          |       |

\*Kouseiren: a welfare association belonging to agricultural cooperative associations.



**TABLE 19.** Dialysate solution bacterial counts (according to the type of facility)

| Kind of facility                           | Dialysate solution bacterial count (cfu/mL) |            |            |            |          | Subtotal     | Unspecified | No information available | Total |
|--|---|------------|------------|------------|----------|--------------|-------------|--------------------------|-------|
|  | <0.1  | 0.1–0.9    | 1–9        | 10–99      | ≥100     |              |             |                          |       |
| National public university hospital (%)    | 8 (34.8)                                    | 7 (30.4)   | 4 (17.4)   | 4 (17.4)   | 0 (0.0)  | 23 (100.0)   | 5           | 23                       | 51    |
| Private university hospital (%)            | 11 (34.4)                                   | 10 (31.3)  | 8 (25.0)   | 3 (9.4)    | 0 (0.0)  | 32 (100.0)   | 10          | 20                       | 62    |
| National hospital (%)                      | 8 (72.7)                                    | 0 (0.0)    | 2 (18.2)   | 1 (9.1)    | 0 (0.0)  | 11 (100.0)   | 4           | 25                       | 40    |
| Prefectural municipal village hospital (%) | 79 (53.0)                                   | 20 (13.4)  | 24 (16.1)  | 22 (14.8)  | 4 (2.7)  | 149 (100.0)  | 62          | 226                      | 437   |
| Social insurance hospital (%)              | 10 (37.0)                                   | 6 (22.2)   | 5 (18.5)   | 6 (22.2)   | 0 (0.0)  | 27 (100.0)   | 10          | 26                       | 63    |
| “Kouseiren”† hospital (%)                  | 28 (50.0)                                   | 10 (17.9)  | 10 (17.9)  | 6 (10.7)   | 2 (3.6)  | 56 (100.0)   | 18          | 45                       | 119   |
| Other public hospital (%)                  | 44 (57.1)                                   | 14 (18.2)  | 13 (16.9)  | 4 (5.2)    | 2 (2.6)  | 77 (100.0)   | 15          | 92                       | 184   |
| Private general hospital (%)               | 15 (48.4)                                   | 4 (12.9)   | 6 (19.4)   | 4 (12.9)   | 2 (6.5)  | 31 (100.0)   | 15          | 62                       | 108   |
| Private hospital (%)                       | 179 (42.2)                                  | 80 (18.9)  | 90 (21.2)  | 60 (14.2)  | 15 (3.5) | 424 (100.0)  | 174         | 514                      | 1112  |
| Private clinic (%)                         | 368 (50.1)                                  | 137 (18.6) | 136 (18.5) | 79 (10.7)  | 15 (2.0) | 735 (100.0)  | 239         | 902                      | 1876  |
| Total (%)                                  | 750 (47.9)                                  | 288 (18.4) | 298 (19.0) | 189 (12.1) | 40 (2.6) | 1565 (100.0) | 552         | 1935                     | 4052  |

†Kouseiren: a welfare association belonging to agricultural cooperative associations.

### 1. Changes over the past three years

Table 33 shows the distribution of hemoglobin concentrations in all the dialysis patients from the end of 2005 to the end of 2007. The mean hemoglobin concentrations in all the dialysis patients at the end of 2005, 2006, and 2007 were 10.23, 10.23, and 10.27 g/

dL, respectively, showing negligible change over these three years; however, the percentages of patients with hemoglobin concentrations <10.0 g/dL at the end of 2005, 2006, and 2007 were 39.0, 39.8, and 37.8%, respectively, showing a slight decrease in 2007. The percentages of patients with hemoglobin

**TABLE 20.** Media used for bacterial cultivation of the dialysate solution (according to the dialysate solution bacterial count)

| Media used for bacterial cultivation of the dialysate solution | Dialysate solution bacterial count (cfu/mL) |            |            |            |          | Subtotal     | Unspecified | No information available | Total |
|--|---|------------|------------|------------|----------|--------------|-------------|--------------------------|-------|
|  | <0.1  | 0.1–0.9    | 1–9        | 10–99      | ≥100     |              |             |                          |       |
| General agar medium (%)  | 122 (61.3)                                  | 33 (16.6)  | 27 (13.6)  | 14 (7.0)   | 3 (1.5)  | 199 (100.0)  | 21          | 0                        | 220   |
| R2A medium (%)   | 410 (41.8)                                  | 189 (19.3) | 211 (21.5) | 141 (14.4) | 29 (3.0) | 980 (100.0)  | 44          | 4                        | 1028  |
| TGEA medium (%)  | 55 (50.0)                                   | 24 (21.8)  | 23 (20.9)  | 7 (6.4)    | 1 (0.9)  | 110 (100.0)  | 1           | 0                        | 111   |
| Blood agar medium (%)  | 26 (65.0)                                   | 5 (12.5)   | 4 (10.0)   | 4 (10.0)   | 1 (2.5)  | 40 (100.0)   | 8           | 4                        | 52    |
| TSA medium (%)   | 4 (44.4)                                    | 1 (11.1)   | 1 (11.1)   | 2 (22.2)   | 1 (11.1) | 9 (100.0)    | 0           | 0                        | 9     |
| Other media (%)  | 59 (60.2)                                   | 15 (15.3)  | 17 (17.3)  | 6 (6.1)    | 1 (1.0)  | 98 (100.0)   | 33          | 0                        | 131   |
| Subtotal (%)   | 676 (47.1)                                  | 267 (18.6) | 283 (19.7) | 174 (12.1) | 36 (2.5) | 1436 (100.0) | 107         | 8                        | 1551  |
| Unspecified (%)  | 73 (57.9)                                   | 20 (15.9)  | 14 (11.1)  | 15 (11.9)  | 4 (3.2)  | 126 (100.0)  | 443         | 1151                     | 1720  |
| No information available (%)                                   | 1 (33.3)                                    | 1 (33.3)   | 1 (33.3)   |            |          | 3 (100.0)    | 2           | 776                      | 781   |
| Total (%)  | 750 (47.9)                                  | 288 (18.4) | 298 (19.0) | 189 (12.1) | 40 (2.6) | 1565 (100.0) | 552         | 1935                     | 4052  |

R2A, Reasoner's No 2 agar; TGEA, tryptone glucose extract agar; TSA, tryptic soy agar.

**TABLE 21.** Amount of sample used for measuring dialysate solution bacterial count (according to the dialysate solution bacterial count)

| Amount of sample                | Dialysate solution bacterial count (cfu/mL) |               |               |               |             | Subtotal        | Unspecified | No information available | Total |
|---------------------------------|---|---------------|---------------|---------------|-------------|-----------------|-------------|--------------------------|-------|
|                                 | <0.1  | 0.1–0.9       | 1–9           | 10–99         | ≥100        |                 |             |                          |       |
| <1 mL<br>(%)                    | 141<br>(69.1)                               | 28<br>(13.7)  | 22<br>(10.8)  | 10<br>(4.9)   | 3<br>(1.5)  | 204<br>(100.0)  | 20          | 2                        | 226   |
| 1–9 mL<br>(%)                   | 253<br>(43.5)                               | 113<br>(19.4) | 132<br>(22.7) | 68<br>(11.7)  | 16<br>(2.7) | 582<br>(100.0)  | 74          | 4                        | 660   |
| 10–49 mL<br>(%)                 | 152<br>(42.9)                               | 64<br>(18.1)  | 71<br>(20.1)  | 58<br>(16.4)  | 9<br>(2.5)  | 354<br>(100.0)  | 21          | 1                        | 376   |
| 50–99 mL<br>(%)                 | 114<br>(46.0)                               | 44<br>(17.7)  | 47<br>(19.0)  | 36<br>(14.5)  | 7<br>(2.8)  | 248<br>(100.0)  | 7           | 1                        | 256   |
| 100–499 mL<br>(%)               | 43<br>(51.2)                                | 19<br>(22.6)  | 14<br>(16.7)  | 7<br>(8.3)    | 1<br>(1.2)  | 84<br>(100.0)   | 4           | 1                        | 89    |
| 500–999 mL<br>(%)               | 4<br>(22.2)                                 | 5<br>(27.8)   | 5<br>(27.8)   | 2<br>(11.1)   | 2<br>(11.1) | 18<br>(100.0)   | 4           | 0                        | 22    |
| 1–9 L<br>(%)                    | 14<br>(58.3)                                | 3<br>(12.5)   | 1<br>(4.2)    | 6<br>(25.0)   | 0<br>(0.0)  | 24<br>(100.0)   | 1           | 0                        | 25    |
| ≥10 L<br>(%)                    | 3<br>(100.0)                                | 0<br>(0.0)    | 0<br>(0.0)    | 0<br>(0.0)    | 0<br>(0.0)  | 3<br>(100.0)    | 0           | 0                        | 3     |
| Subtotal<br>(%)                 | 724<br>(47.7)                               | 276<br>(18.2) | 292<br>(19.2) | 187<br>(12.3) | 38<br>(2.5) | 1517<br>(100.0) | 131         | 9                        | 1657  |
| Unspecified<br>(%)              | 24<br>(53.3)                                | 12<br>(26.7)  | 5<br>(11.1)   | 2<br>(4.4)    | 2<br>(4.4)  | 45<br>(100.0)   | 420         | 1138                     | 1603  |
| No information available<br>(%) | 2<br>(66.7)                                 | 0<br>(0.0)    | 1<br>(33.3)   | 0<br>(0.0)    | 0<br>(0.0)  | 3<br>(100.0)    | 3           | 788                      | 792   |
| Total<br>(%)                    | 750<br>(47.9)                               | 288<br>(18.4) | 298<br>(19.0) | 189<br>(12.1) | 40<br>(2.6) | 1565<br>(100.0) | 552         | 1935                     | 4052  |

concentrations of  $\geq 10.0$  g/dL and  $< 12.0$  g/dL at the end of 2005, 2006, and 2007 were 52.7, 51.9, and 53.9%, respectively, showing a slight increase in 2007. The percentage of patients with a hemoglobin concentration of  $\geq 12.0$  g/dL remained at 8.3% from the end of 2005 to the end of 2007.

## 2. Gender

Table 34 shows the relationship between hemoglobin concentration and gender. The mean hemoglobin concentration in male patients was 10.36 g/dL, whereas that in female patients was 10.13 g/dL, which was slightly lower than that in male patients. The percentage of patients with hemoglobin concentrations  $< 10$  g/dL was 35.1% in male patients and 42.2% in female patients, indicating that the number of patients with a low hemoglobin concentration is great in female patients.

## 3. Age

Table 35 shows the relationship between hemoglobin concentration and age. The hemoglobin concen-

tration in young patients aged 15 years or older and younger than 45 years was high, whereas that in patients older than this age group decreased with increasing age. Patients younger than 15 years also tended to have low hemoglobin concentrations.

## 4. Primary disease

Table 36 shows the relationship between hemoglobin concentration and primary disease. The mean hemoglobin concentrations in patients with leading primary diseases were 10.33 g/dL (chronic glomerulonephritis), 10.22 g/dL (diabetic nephropathy), 10.20 g/dL (nephrosclerosis), and 10.45 g/dL (polycystic kidney disease). Patients with polycystic kidney disease tended to have a high hemoglobin concentration. No clear difference in hemoglobin concentration was found between other main primary diseases.

## 5. Change in iron metabolism-related indices over the past three years

Table 37 shows the changes in mean hemoglobin concentration, serum iron concentration, total

**TABLE 22.** Changes in hepatitis C virus (HCV) antibody prevalence

| Year                 | 1999  | 2000  | 2001  | 2002  | 2003  | 2006  | 2007 |
|----------------------|-------|-------|-------|-------|-------|-------|------|
| HCVAb prevalence (%) | 15.95 | 14.56 | 13.88 | 13.06 | 12.37 | 10.22 | 9.83 |

**TABLE 23.** Hepatitis C virus (HCV) antibody (HCVAb) prevalence and treatment methods (all dialysis patients)

| Method of dialysis    | HCVAb: --  |            |                      |                                   |            |            | HCVAb: +                |                                   |            |            |                      |                                   | HCVAb: no information available |            |                      |                                   |            |            | Total |                      |        |         |
|-----------------------|------------|------------|----------------------|-----------------------------------|------------|------------|-------------------------|-----------------------------------|------------|------------|----------------------|-----------------------------------|---------------------------------|------------|----------------------|-----------------------------------|------------|------------|-------|----------------------|--------|---------|
|                       | HCV-RNA: - |            |                      | HCV-RNA: +                        |            |            | HCV-RNA: -              |                                   |            | HCV-RNA: + |                      |                                   | HCV-RNA: unspecified            |            |                      | HCV-RNA: no information available |            |            |       |                      |        |         |
|                       | HCV-RNA: - | HCV-RNA: + | HCV-RNA: unspecified | HCV-RNA: no information available | Subtotal-1 | Subtotal-2 | Subtotal-1 + Subtotal-2 | HCVAb prevalence <sup>†</sup> (%) | HCV-RNA: - | HCV-RNA: + | HCV-RNA: unspecified | HCV-RNA: no information available | HCV-RNA: -                      | HCV-RNA: + | HCV-RNA: unspecified | HCV-RNA: no information available | HCV-RNA: - | HCV-RNA: + |       | HCV-RNA: unspecified |        |         |
| Facility hemodialysis | 48 867     | 209        | 85 241               | 35 980                            | 170 297    | 2801       | 4707                    | 6706                              | 3193       | 17 407     | 187 704              | 9.27                              | 1044                            | 196        | 1974                 | 100                               | 880        | 148        | 619   | 192 665              | 43 295 | 235 960 |
| Hemodiafiltration     | 3 722      | 35         | 5 763                | 2 524                             | 12 044     | 268        | 742                     | 813                               | 474        | 2 297      | 14 341               | 16.02                             | 33                              | 31         | 64                   | 2                                 | 74         | 21         | 101   | 14 667               | 3 092  | 17 759  |
| Hemofiltration        | 14         | 0          | 19                   | 131                               | 164        | 2          | 4                       | 5                                 | 10         | 21         | 185                  | 11.35                             | 4                               | 0          | 0                    | 0                                 | 0          | 0          | 1     | 190                  | 113    | 303     |
| Hemoadsorption        | 200        | 4          | 391                  | 149                               | 744        | 60         | 171                     | 212                               | 102        | 545        | 1 289                | 42.28                             | 1                               | 15         | 10                   | 0                                 | 7          | 8          | 12    | 1 342                | 201    | 1 543   |
| Home hemodialysis     | 46         | 0          | 46                   | 9                                 | 101        | 1          | 5                       | 9                                 | 2          | 17         | 118                  | 14.41                             | 0                               | 0          | 4                    | 0                                 | 0          | 0          | 0     | 122                  | 39     | 161     |
| Peritoneal dialysis   | 1 164      | 2          | 2 681                | 966                               | 4813       | 46         | 28                      | 110                               | 46         | 230        | 5 043                | 4.56                              | 4                               | 0          | 211                  | 99                                | 6          | 1          | 61    | 5 425                | 3 205  | 8 630   |
| Total                 | 54 013     | 250        | 94 141               | 39 759                            | 188 163    | 3 178      | 5 657                   | 7 855                             | 3 827      | 20 517     | 208 680              | 9.83                              | 1086                            | 242        | 2 263                | 201                               | 967        | 178        | 794   | 214 411              | 49 945 | 264 356 |

<sup>†</sup>HCVAb prevalence (%) = Subtotal-2 ÷ (Subtotal-1 + Subtotal-2).

**TABLE 24.** Hepatitis C virus (HCV) antibody (HCVAb) prevalence and gender (all dialysis patients)

| Genders                  | HCVAb: --  |            |                      |                                   |            |            | HCVAb: +                |                                   |            |            |                      |                                   | HCVAb: no information available |            |                      |                                   |            |            | Total |                      |        |         |
|--------------------------|------------|------------|----------------------|-----------------------------------|------------|------------|-------------------------|-----------------------------------|------------|------------|----------------------|-----------------------------------|---------------------------------|------------|----------------------|-----------------------------------|------------|------------|-------|----------------------|--------|---------|
|                          | HCV-RNA: - |            |                      | HCV-RNA: +                        |            |            | HCV-RNA: -              |                                   |            | HCV-RNA: + |                      |                                   | HCV-RNA: unspecified            |            |                      | HCV-RNA: no information available |            |            |       |                      |        |         |
|                          | HCV-RNA: - | HCV-RNA: + | HCV-RNA: unspecified | HCV-RNA: no information available | Subtotal-1 | Subtotal-2 | Subtotal-1 + Subtotal-2 | HCVAb prevalence <sup>†</sup> (%) | HCV-RNA: - | HCV-RNA: + | HCV-RNA: unspecified | HCV-RNA: no information available | HCV-RNA: -                      | HCV-RNA: + | HCV-RNA: unspecified | HCV-RNA: no information available | HCV-RNA: - | HCV-RNA: + |       | HCV-RNA: unspecified |        |         |
| Male                     | 32 940     | 142        | 57 299               | 24 223                            | 114 604    | 2007       | 3746                    | 5207                              | 2516       | 13 476     | 128 080              | 10.52                             | 619                             | 150        | 1421                 | 131                               | 594        | 116        | 501   | 131 612              | 30 611 | 162 223 |
| Female                   | 21 073     | 108        | 36 840               | 15 517                            | 73 538     | 1171       | 1911                    | 2648                              | 1311       | 7 041      | 80 579               | 8.74                              | 467                             | 92         | 842                  | 70                                | 373        | 62         | 293   | 82 778               | 19 334 | 102 112 |
| Subtotal                 | 54 013     | 250        | 94 139               | 39 740                            | 188 142    | 3178       | 5657                    | 7855                              | 3827       | 20 517     | 208 659              | 9.83                              | 1086                            | 242        | 2263                 | 201                               | 967        | 178        | 794   | 214 390              | 49 945 | 264 335 |
| No information available | 0          | 0          | 2                    | 19                                | 21         | 0          | 0                       | 0                                 | 0          | 0          | 21                   | 0.00                              | 0                               | 0          | 0                    | 0                                 | 0          | 0          | 0     | 21                   | 0      | 21      |
| Total                    | 54 013     | 250        | 94 141               | 39 759                            | 188 163    | 3178       | 5657                    | 7855                              | 3827       | 20 517     | 208 680              | 9.83                              | 1086                            | 242        | 2263                 | 201                               | 967        | 178        | 794   | 214 411              | 49 945 | 264 356 |

<sup>†</sup>HCVAb prevalence (%) = Subtotal-2 ÷ (Subtotal-1 + Subtotal-2).

**TABLE 25.** Hepatitis C virus (HCV) antibody (HCVAb) prevalence and duration of dialysis (all dialysis patients)

| Duration of dialysis (years) | HCVAb: -   |            |                      | HCVAb: +   |            |                      | HCVAb: unspecified |            |                      | HCVAb: no information available |            |                      | Total |      |      |       |      |         |        |         |
|------------------------------|------------|------------|----------------------|------------|------------|----------------------|--------------------|------------|----------------------|---------------------------------|------------|----------------------|-------|------|------|-------|------|---------|--------|---------|
|                              | HCV-RNA: - | HCV-RNA: + | HCV-RNA: unspecified | HCV-RNA: - | HCV-RNA: + | HCV-RNA: unspecified | HCV-RNA: -         | HCV-RNA: + | HCV-RNA: unspecified | HCV-RNA: -                      | HCV-RNA: + | HCV-RNA: unspecified |       |      |      |       |      |         |        |         |
| <2                           | 13 113     | 52         | 22 936               | 9271       | 45 372     | 565                  | 847                | 3 713      | 49 085               | 7.56                            | 177        | 27                   | 687   | 82   | 260  | 32    | 121  | 50 471  | 11 667 | 62 138  |
| 2-4                          | 14 226     | 57         | 24 849               | 10 581     | 49 713     | 711                  | 1114               | 4 258      | 53 971               | 7.89                            | 265        | 41                   | 564   | 57   | 229  | 38    | 203  | 55 368  | 13 202 | 68 570  |
| 5-9                          | 13 816     | 52         | 24 042               | 10 077     | 47 987     | 702                  | 1084               | 4 087      | 52 074               | 7.85                            | 343        | 51                   | 531   | 28   | 210  | 37    | 168  | 53 442  | 12 634 | 66 076  |
| 10-14                        | 6 771      | 30         | 11 844               | 4 857      | 23 502     | 332                  | 571                | 734        | 25 485               | 7.78                            | 158        | 24                   | 247   | 14   | 124  | 14    | 101  | 26 167  | 6 103  | 32 270  |
| 15-19                        | 3 243      | 16         | 5 711                | 2 672      | 11 642     | 219                  | 417                | 1 397      | 13 039               | 10.71                           | 86         | 24                   | 127   | 10   | 67   | 12    | 66   | 13 431  | 3 041  | 16 472  |
| 20-24                        | 1 691      | 15         | 2 794                | 1 366      | 5 866      | 264                  | 555                | 622        | 7 648                | 23.30                           | 33         | 19                   | 58    | 7    | 30   | 16    | 59   | 7 870   | 1 733  | 9 603   |
| ≥25                          | 1 153      | 28         | 1 965                | 935        | 4 081      | 385                  | 1 069              | 3 297      | 7 378                | 44.69                           | 24         | 56                   | 49    | 3    | 47   | 29    | 76   | 7 662   | 1 565  | 9 227   |
| Total                        | 54 013     | 250        | 94 141               | 39 759     | 188 163    | 3 178                | 5 657              | 7855       | 20 517               | 9.83                            | 1086       | 242                  | 2 263 | 201  | 967  | 178   | 794  | 214 411 | 49 945 | 264 356 |
| Mean                         | 6.35       | 9.26       | 6.32                 | 6.56       | 9.99       | 12.09                | 10.38              | 11.25      | 7.28                 | 13.63                           | 5.77       | 4.64                 | 6.93  | 6.22 | 7.43 | 10.37 | 9.05 | 6.84    | 6.68   | 6.81    |
| SD                           | 6.35       | 9.34       | 6.31                 | 6.51       | 9.64       | 10.63                | 10.26              | 10.58      | 6.24                 | 11.11                           | 6.33       | 6.22                 | 7.43  | 6.22 | 7.43 | 10.37 | 9.05 | 7.02    | 6.82   | 6.98    |

<sup>†</sup>HCVAb prevalence (%) = Subtotal-2 ÷ (Subtotal-1 + Subtotal-2).

**TABLE 26.** Hepatitis C virus (HCV) antibody (HCVAb) prevalence and age (all dialysis patients)

| Age (years)              | HCVAb: -   |            |                      | HCVAb: +   |            |                      | HCVAb: unspecified |            |                      | HCVAb: no information available |            |                      | Total |       |       |       |       |         |        |         |
|--------------------------|------------|------------|----------------------|------------|------------|----------------------|--------------------|------------|----------------------|---------------------------------|------------|----------------------|-------|-------|-------|-------|-------|---------|--------|---------|
|                          | HCV-RNA: - | HCV-RNA: + | HCV-RNA: unspecified | HCV-RNA: - | HCV-RNA: + | HCV-RNA: unspecified | HCV-RNA: -         | HCV-RNA: + | HCV-RNA: unspecified | HCV-RNA: -                      | HCV-RNA: + | HCV-RNA: unspecified |       |       |       |       |       |         |        |         |
| <15                      | 12         | 0          | 29                   | 0          | 0          | 0                    | 0                  | 0          | 8                    | 0                               | 0          | 0                    | 0     | 0     | 0     | 0     | 0     | 68      | 38     | 106     |
| 15-29                    | 356        | 2          | 620                  | 1 272      | 10         | 7                    | 10                 | 2          | 29                   | 1 301                           | 2.23       | 9                    | 4     | 19    | 3     | 7     | 5     | 1 344   | 353    | 1 697   |
| 30-44                    | 3 469      | 6          | 6 083                | 2 619      | 12 177     | 115                  | 226                | 138        | 705                  | 12 882                          | 5.47       | 70                   | 4     | 149   | 15    | 64    | 7     | 13 234  | 3 187  | 16 421  |
| 45-59                    | 13 550     | 58         | 23 765               | 10 126     | 47 499     | 778                  | 1 676              | 2 005      | 5 578                | 53 077                          | 10.51      | 255                  | 71    | 555   | 63    | 243   | 51    | 54 551  | 12 890 | 67 441  |
| 60-74                    | 23 456     | 115        | 40 903               | 17 153     | 81 627     | 1 477                | 2 626              | 3 823      | 9 764                | 91 391                          | 10.68      | 482                  | 115   | 961   | 85    | 420   | 74    | 93 844  | 21 477 | 115 321 |
| 75-89                    | 12 598     | 68         | 21 774               | 9 149      | 43 589     | 773                  | 1 101              | 1 744      | 4 335                | 47 924                          | 9.05       | 251                  | 50    | 547   | 32    | 225   | 46    | 49 263  | 11 465 | 60 728  |
| ≥90                      | 572        | 1          | 966                  | 398        | 1 937      | 25                   | 21                 | 47         | 12                   | 2 042                           | 5.14       | 19                   | 2     | 24    | 3     | 8     | 0     | 2 104   | 532    | 2 636   |
| Subtotal                 | 54 013     | 250        | 94 140               | 39 758     | 188 161    | 3 178                | 5 657              | 7 855      | 20 516               | 208 677                         | 9.83       | 1086                 | 242   | 2 263 | 201   | 967   | 178   | 214 408 | 49 942 | 264 350 |
| No information available | 0          | 0          | 1                    | 2          | 0          | 0                    | 0                  | 1          | 1                    | 3                               | 33.33      | 0                    | 0     | 0     | 0     | 0     | 0     | 3       | 3      | 6       |
| Total                    | 54 013     | 250        | 94 141               | 39 759     | 188 163    | 3 178                | 5 657              | 7 855      | 20 517               | 208 680                         | 9.83       | 1086                 | 242   | 2 263 | 201   | 967   | 178   | 214 411 | 49 945 | 264 356 |
| Mean                     | 64.96      | 66.36      | 64.85                | 64.66      | 66.15      | 64.52                | 65.90              | 64.68      | 65.45                | 65.47                           | 64.57      | 62.57                | 64.91 | 62.57 | 64.91 | 65.76 | 64.42 | 64.89   | 64.76  | 64.87   |
| SD                       | 12.80      | 11.76      | 12.82                | 12.91      | 11.36      | 10.93                | 10.69              | 10.65      | 12.92                | 10.07                           | 13.53      | 13.12                | 12.74 | 11.08 | 12.52 | 11.08 | 12.52 | 12.66   | 12.90  | 12.71   |

<sup>†</sup>HCVAb prevalence (%) = Subtotal-2 ÷ (Subtotal-1 + Subtotal-2).

**TABLE 27. Hepatitis C virus (HCV) antibody (HCVAb) prevalence and primary disease (all dialysis patients)**

| Primary disease   | HCVAb: -   |            |                      |                                   |                                   |                                   | HCVAb: +   |            |                      |                                   |                                   |                                   | HCVAb: no information available |            |                      |                                   |                                   |                                   | Total |         |        |         |
|---|------------|------------|----------------------|-----------------------------------|-----------------------------------|-----------------------------------|------------|------------|----------------------|-----------------------------------|-----------------------------------|-----------------------------------|---------------------------------|------------|----------------------|-----------------------------------|-----------------------------------|-----------------------------------|-------|---------|--------|---------|
|   | HCV-RNA: - |            |                      | HCV-RNA: no information available |                                   |                                   | HCV-RNA: - |            |                      | HCV-RNA: no information available |                                   |                                   | HCV-RNA: -                      |            |                      | HCV-RNA: no information available |                                   |                                   |       |         |        |         |
|   | HCV-RNA: - | HCV-RNA: + | HCV-RNA: unspecified | HCV-RNA: unspecified              | HCV-RNA: no information available | HCV-RNA: no information available | HCV-RNA: - | HCV-RNA: + | HCV-RNA: unspecified | HCV-RNA: unspecified              | HCV-RNA: no information available | HCV-RNA: no information available | HCV-RNA: -                      | HCV-RNA: + | HCV-RNA: unspecified | HCV-RNA: unspecified              | HCV-RNA: no information available | HCV-RNA: no information available |       |         |        |         |
| Reintroduction after transplantation                      | 303        | 5          | 602                  | 247                               | 1 157                             | 31                                | 94         | 113        | 66                   | 304                               | 1 461                             | 20.81                             | 1                               | 2          | 18                   | 14                                | 7                                 | 5                                 | 5     | 1 513   | 381    | 1894    |
| Kidney and urinary tract tuberculosis                     | 68         | 1          | 136                  | 38                                | 243                               | 11                                | 18         | 22         | 10                   | 61                                | 304                               | 20.07                             | 0                               | 2          | 5                    | 0                                 | 0                                 | 0                                 | 1     | 312     | 80     | 392     |
| Nephropathy of pregnancy/pregnancy toxemia                | 340        | 2          | 604                  | 288                               | 1 234                             | 34                                | 55         | 65         | 46                   | 200                               | 1 434                             | 13.95                             | 2                               | 3          | 13                   | 2                                 | 5                                 | 2                                 | 3     | 1 464   | 311    | 1 775   |
| Other nephritides that cannot be classified               | 242        | 1          | 386                  | 186                               | 815                               | 23                                | 34         | 40         | 21                   | 118                               | 933                               | 12.65                             | 5                               | 2          | 9                    | 2                                 | 5                                 | 0                                 | 1     | 957     | 257    | 1 214   |
| Kidney and urinary tract stone                            | 118        | 0          | 192                  | 91                                | 401                               | 10                                | 16         | 18         | 8                    | 52                                | 453                               | 11.48                             | 2                               | 0          | 8                    | 0                                 | 1                                 | 0                                 | 2     | 466     | 86     | 552     |
| Chronic pyelonephritis                                    | 655        | 3          | 1 028                | 515                               | 2 201                             | 57                                | 74         | 95         | 55                   | 281                               | 2 482                             | 11.32                             | 13                              | 0          | 15                   | 2                                 | 9                                 | 3                                 | 16    | 2 540   | 598    | 3 138   |
| Obstructive urinary tract disease                         | 129        | 1          | 255                  | 92                                | 477                               | 12                                | 14         | 21         | 11                   | 58                                | 535                               | 10.84                             | 4                               | 1          | 8                    | 0                                 | 2                                 | 1                                 | 4     | 555     | 137    | 692     |
| Renal failure due to congenital abnormality of metabolism | 41         | 0          | 101                  | 37                                | 179                               | 5                                 | 6          | 7          | 3                    | 21                                | 200                               | 10.50                             | 0                               | 0          | 2                    | 0                                 | 0                                 | 0                                 | 0     | 202     | 60     | 262     |
| Chronic glomerulonephritis                                | 21 986     | 100        | 37 281               | 15 979                            | 75 346                            | 1344                              | 2531       | 3236       | 1584                 | 8 695                             | 84 041                            | 10.35                             | 491                             | 123        | 900                  | 62                                | 394                               | 72                                | 411   | 86 494  | 20 210 | 106 704 |
| Diabetic nephropathy                                      | 18 151     | 91         | 31 464               | 13 097                            | 62 803                            | 1050                              | 1909       | 2838       | 1409                 | 7 206                             | 70 009                            | 10.29                             | 386                             | 81         | 731                  | 72                                | 348                               | 69                                | 236   | 71 932  | 16 326 | 88 258  |
| Hypoplastic kidney  | 98         | 1          | 200                  | 87                                | 386                               | 9                                 | 12         | 14         | 5                    | 40                                | 426                               | 9.39                              | 2                               | 1          | 11                   | 0                                 | 1                                 | 0                                 | 0     | 441     | 107    | 548     |
| Others  | 976        | 7          | 1 700                | 662                               | 3 345                             | 48                                | 94         | 136        | 61                   | 339                               | 3 684                             | 9.20                              | 15                              | 5          | 42                   | 5                                 | 8                                 | 2                                 | 10    | 3 771   | 954    | 4 725   |
| Undetermined  | 3 801      | 18         | 6 918                | 2 924                             | 13 661                            | 230                               | 317        | 518        | 224                  | 1 289                             | 14 950                            | 8.62                              | 58                              | 11         | 220                  | 24                                | 63                                | 10                                | 45    | 15 381  | 4 072  | 19 453  |
| Kidney and urinary tract tumor                            | 150        | 2          | 230                  | 114                               | 496                               | 10                                | 11         | 16         | 4                    | 41                                | 537                               | 7.64                              | 2                               | 0          | 4                    | 2                                 | 4                                 | 0                                 | 0     | 549     | 95     | 644     |
| Gouty kidney  | 261        | 1          | 474                  | 197                               | 933                               | 15                                | 21         | 27         | 12                   | 75                                | 1 008                             | 7.44                              | 7                               | 1          | 10                   | 0                                 | 7                                 | 2                                 | 3     | 1 038   | 219    | 1 257   |
| Nephrosclerosis   | 3 489      | 9          | 6 720                | 2 627                             | 12 845                            | 167                               | 239        | 389        | 155                  | 950                               | 13 795                            | 6.89                              | 40                              | 6          | 142                  | 10                                | 58                                | 6                                 | 22    | 14 079  | 3 065  | 17 144  |
| Amyloid kidney  | 83         | 0          | 197                  | 90                                | 370                               | 3                                 | 11         | 6          | 7                    | 27                                | 397                               | 6.80                              | 1                               | 0          | 3                    | 1                                 | 2                                 | 0                                 | 3     | 407     | 106    | 513     |
| Rapidly progressive glomerulonephritis                    | 322        | 1          | 649                  | 276                               | 1 248                             | 16                                | 16         | 33         | 24                   | 89                                | 1 337                             | 6.66                              | 1                               | 1          | 15                   | 0                                 | 4                                 | 0                                 | 7     | 1 365   | 377    | 1 742   |
| Malignant hypertension                                    | 410        | 0          | 661                  | 346                               | 1 417                             | 13                                | 29         | 37         | 20                   | 99                                | 1 516                             | 6.53                              | 9                               | 0          | 11                   | 0                                 | 11                                | 0                                 | 4     | 1 551   | 405    | 1 956   |
| Systemic lupus erythematosus nephritis                    | 435        | 1          | 835                  | 360                               | 1 631                             | 16                                | 35         | 37         | 21                   | 109                               | 1 740                             | 6.26                              | 2                               | 2          | 19                   | 0                                 | 8                                 | 1                                 | 5     | 1 777   | 484    | 2 261   |
| Polycystic kidney   | 1 908      | 6          | 3 408                | 1 456                             | 6 778                             | 74                                | 119        | 180        | 74                   | 447                               | 7 225                             | 6.19                              | 44                              | 1          | 75                   | 3                                 | 29                                | 5                                 | 14    | 7 396   | 1 524  | 8 920   |
| Myeloma   | 38         | 0          | 74                   | 36                                | 148                               | 0                                 | 1          | 4          | 2                    | 7                                 | 155                               | 4.52                              | 1                               | 0          | 2                    | 0                                 | 1                                 | 0                                 | 2     | 161     | 46     | 207     |
| Subtotal  | 54 004     | 250        | 94 115               | 39 745                            | 188 114                           | 3 178                             | 5 656      | 7 852      | 3 822                | 20 508                            | 208 622                           | 9.83                              | 1 086                           | 242        | 2 263                | 199                               | 967                               | 178                               | 794   | 214 351 | 49 900 | 264 251 |
| No information available                                  | 9          | 0          | 26                   | 14                                | 49                                | 0                                 | 1          | 3          | 5                    | 9                                 | 58                                | 15.52                             | 0                               | 0          | 0                    | 2                                 | 0                                 | 0                                 | 0     | 60      | 45     | 105     |
| Total   | 54 013     | 250        | 94 141               | 39 759                            | 188 163                           | 3 178                             | 5 657      | 7 855      | 3 827                | 20 517                            | 208 680                           | 9.83                              | 1 086                           | 242        | 2 263                | 201                               | 967                               | 178                               | 794   | 214 411 | 49 945 | 264 356 |

<sup>†</sup>HCVAb prevalence (%) = Subtotal-2 ÷ (Subtotal-1 + Subtotal-2).

**TABLE 28.** Hepatitis B virus surface antigen (HBsAg) prevalence and treatment methods (all dialysis patients)

| Method of dialysis    | HBs antibody: - |      |          |      |                    |     | HBs antibody: +                 |     |          |     |          |     | HBs antibody: unspecified |     |                                 |         |          |         | HBs antibody: no information available |         |                    |         |      |         | Subtotal | No information available | Total |
|-----------------------|-----------------|------|----------|------|--------------------|-----|---------------------------------|-----|----------|-----|----------|-----|---------------------------|-----|---------------------------------|---------|----------|---------|--|---------|--------------------|---------|------|---------|----------|--------------------------|-------|
|                       | HBsAg: -        |      | HBsAg: + |      | HBsAg: unspecified |     | HBsAg: no information available |     | HBsAg: - |     | HBsAg: + |     | HBsAg: unspecified        |     | HBsAg: no information available |         | HBsAg: - |         | HBsAg: +                               |         | HBsAg: unspecified |         |      |         |          |                          |       |
|                       | 102 263         | 1850 | 970      | 1198 | 16 152             | 627 | 78                              | 341 | 47 508   | 723 | 1749     | 229 | 19 049                    | 464 | 19                              | 184 972 | 3664     | 188 636 | 1.94                                   | 193 220 | 42 740             | 235 960 |      |         |          |                          |       |
| Facility hemodialysis | 7 958           | 133  | 54       | 90   | 1 328              | 51  | 2                               | 47  | 3 206    | 59  | 43       | 16  | 1 686                     | 42  | 3                               | 14 178  | 285      | 14 463  | 1.97                                   | 14 718  | 3 041              | 17 759  |      |         |          |                          |       |
| Hemodiafiltration     | 110             | 2    | 0        | 0    | 5                  | 0   | 1                               | 17  | 0        | 0   | 0        | 4   | 0                         | 0   | 0                               | 136     | 2        | 138     | 1.45                                   | 139     | 164                | 303     |      |         |          |                          |       |
| Hemofiltration        | 659             | 28   | 5        | 12   | 154                | 7   | 1                               | 3   | 344      | 10  | 6        | 11  | 96                        | 3   | 0                               | 1 253   | 48       | 1 301   | 3.69                                   | 1 339   | 204                | 1 543   |      |         |          |                          |       |
| Hemoadsorption        | 89              | 2    | 0        | 0    | 14                 | 0   | 0                               | 0   | 8        | 0   | 4        | 0   | 4                         | 0   | 0                               | 115     | 2        | 117     | 1.71                                   | 121     | 40                 | 161     |      |         |          |                          |       |
| Home hemodialysis     | 2 237           | 29   | 28       | 12   | 128                | 7   | 0                               | 6   | 1 888    | 29  | 282      | 49  | 680                       | 11  | 9                               | 4 933   | 76       | 5 009   | 1.52                                   | 5 395   | 3 235              | 8 630   |      |         |          |                          |       |
| Peritoneal dialysis   | 113 316         | 2044 | 1057     | 1312 | 17 781             | 692 | 81                              | 398 | 52 971   | 821 | 2084     | 305 | 21 519                    | 520 | 31                              | 205 587 | 4077     | 209 664 | 1.94                                   | 214 932 | 49 424             | 264 356 |      |         |          |                          |       |
| Total                 |                 |      |          |      |                    |     |                                 |     |          |     |          |     |                           |     |                                 |         |          |         |  |         |                    |         | 1.94 | 214 932 | 49 424   | 264 356                  |       |

<sup>†</sup>HBsAg prevalence (%) = Subtotal-2 ÷ (Subtotal-1 + Subtotal-2).

**TABLE 29.** Hepatitis B virus surface antigen (HBsAg) prevalence and genders (all dialysis patients)

| Gender                   | HBs antibody: - |      |          |      |                    |     | HBs antibody: +                 |     |          |     |          |     | HBs antibody: unspecified |     |  |         |          |         | HBs antibody: no information available |         |                    |         |      |    | Subtotal | No information available | Total |
|--------------------------|-----------------|------|----------|------|--------------------|-----|---------------------------------|-----|----------|-----|----------|-----|---------------------------|-----|--|---------|----------|---------|--|---------|--------------------|---------|------|----|----------|--------------------------|-------|
|                          | HBsAg: -        |      | HBsAg: + |      | HBsAg: unspecified |     | HBsAg: no information available |     | HBsAg: - |     | HBsAg: + |     | HBsAg: unspecified        |     | HBsAg: no information available  |         | HBsAg: - |         | HBsAg: +                               |         | HBsAg: unspecified |         |      |    |          |                          |       |
|                          | 69 324          | 1326 | 653      | 847  | 11 059             | 464 | 38                              | 244 | 32 372   | 526 | 1296     | 193 | 13 209                    | 346 | 23 <td>125 964</td> <td>2662</td> <td>128 626</td> <td>2.07</td> <td>131 920</td> <td>30 303</td> <td>162 223</td> | 125 964 | 2662     | 128 626 | 2.07                                   | 131 920 | 30 303             | 162 223 |      |    |          |                          |       |
| Male                     | 43 992          | 718  | 404      | 465  | 6 722              | 228 | 43                              | 154 | 20 597   | 295 | 788      | 112 | 8 291                     | 174 | 8  | 79 602  | 1415     | 81 017  | 1.75                                   | 82 991  | 19 121             | 102 112 |      |    |          |                          |       |
| Female                   | 113 316         | 2044 | 1057     | 1312 | 17 781             | 692 | 81                              | 398 | 52 969   | 821 | 2084     | 305 | 21 500                    | 520 | 31   | 205 566 | 4077     | 209 643 | 1.94                                   | 214 911 | 49 424             | 264 335 |      |    |          |                          |       |
| Subtotal                 | 0               | 0    | 0        | 0    | 0                  | 0   | 0                               | 0   | 2        | 0   | 0        | 0   | 19                        | 0   | 0  | 21      | 0        | 21      | 0.00                                   | 21      | 0                  | 21      |      |    |          |                          |       |
| No information available |                 |      |          |      |                    |     |                                 |     |          |     |          |     |                           |     |  |         |          |         |  |         |                    |         | 0.00 | 21 | 0        | 21                       |       |
| Total                    | 113 316         | 2044 | 1057     | 1312 | 17 781             | 692 | 81                              | 398 | 52 971   | 821 | 2084     | 305 | 21 519                    | 520 | 31   | 205 587 | 4077     | 209 664 | 1.94                                   | 214 932 | 49 424             | 264 356 |      |    |          |                          |       |

<sup>†</sup>HBsAg prevalence (%) = Subtotal-2 ÷ (Subtotal-1 + Subtotal-2).

**TABLE 30. Hepatitis B virus surface antigen (HBsAg) prevalence and durations of dialysis (all dialysis patients)**

| Duration of dialysis (years) | HBs antibody: - |          |                    |                                 |          |          |                    |                                 |                    |          |                    |                                 | HBs antibody: +                 |          |                    |                                 |          |          |                    |                                 |          |          |                    |                                 | HBs antibody: unspecified |          |                    |                                 |                                 |  |  |  |  |  |  |  | HBs antibody: no information available |  |  |  |  |  |  |  |  |  |  |  | Subtotal | No information available | Total |
|------------------------------|-----------------|----------|--------------------|---------------------------------|----------|----------|--------------------|---------------------------------|--------------------|----------|--------------------|---------------------------------|---------------------------------|----------|--------------------|---------------------------------|----------|----------|--------------------|---------------------------------|----------|----------|--------------------|---------------------------------|---------------------------|----------|--------------------|---------------------------------|---------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----------|--------------------------|-------|
|                              | HBsAg: -        |          |                    |                                 | HBsAg: + |          |                    |                                 | HBsAg: unspecified |          |                    |                                 | HBsAg: no information available |          |                    |                                 | HBsAg: - |          |                    |                                 | HBsAg: + |          |                    |                                 | HBsAg: unspecified        |          |                    |                                 | HBsAg: no information available |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |          |                          |       |
|                              | HBsAg: -        | HBsAg: + | HBsAg: unspecified | HBsAg: no information available | HBsAg: - | HBsAg: + | HBsAg: unspecified | HBsAg: no information available | HBsAg: -           | HBsAg: + | HBsAg: unspecified | HBsAg: no information available | HBsAg: -                        | HBsAg: + | HBsAg: unspecified | HBsAg: no information available | HBsAg: - | HBsAg: + | HBsAg: unspecified | HBsAg: no information available | HBsAg: - | HBsAg: + | HBsAg: unspecified | HBsAg: no information available | HBsAg: -                  | HBsAg: + | HBsAg: unspecified | HBsAg: no information available |                                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |          |                          |       |
| <2                           | 26 996          | 404      | 318                | 250                             | 3 362    | 124      | 8                  | 65                              | 12 977             | 189      | 625                | 48                              | 4 980                           | 114      | 15                 | 48 315                          | 831      | 49 146   | 50 475             | 1 69                            | 50 475   | 11 663   | 62 138             |                                 |                           |          |                    |                                 |                                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |          |                          |       |
| 2-4                          | 29 327          | 481      | 290                | 317                             | 4 472    | 158      | 15                 | 110                             | 13 653             | 215      | 543                | 95                              | 5 737                           | 119      | 7                  | 53 189                          | 973      | 54 162   | 55 539             | 1 80                            | 55 539   | 13 031   | 68 570             |                                 |                           |          |                    |                                 |                                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |          |                          |       |
| 5-9                          | 28 262          | 507      | 284                | 309                             | 4 573    | 182      | 20                 | 96                              | 13 075             | 175      | 493                | 71                              | 5 451                           | 123      | 7                  | 51 361                          | 987      | 52 348   | 53 628             | 1 89                            | 53 628   | 12 448   | 66 076             |                                 |                           |          |                    |                                 |                                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |          |                          |       |
| 10-14                        | 13 933          | 275      | 79                 | 160                             | 2 303    | 96       | 12                 | 45                              | 6 416              | 106      | 217                | 47                              | 2 486                           | 73       | 1                  | 25 138                          | 550      | 25 688   | 26 249             | 2 14                            | 26 249   | 6 021    | 32 270             |                                 |                           |          |                    |                                 |                                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |          |                          |       |
| 15-19                        | 7 035           | 142      | 38                 | 105                             | 1 269    | 58       | 8                  | 32                              | 3 244              | 59       | 113                | 18                              | 1 323                           | 45       | 0                  | 12 871                          | 304      | 13 175   | 13 489             | 2 31                            | 13 489   | 2 983    | 16 472             |                                 |                           |          |                    |                                 |                                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |          |                          |       |
| 20-24                        | 4 086           | 94       | 27                 | 70                              | 825      | 43       | 6                  | 18                              | 1 803              | 32       | 46                 | 11                              | 792                             | 24       | 1                  | 7 506                           | 193      | 7 699    | 7 878              | 2 51                            | 7 878    | 1 725    | 9 603              |                                 |                           |          |                    |                                 |                                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |          |                          |       |
| ≥25                          | 3 677           | 141      | 21                 | 101                             | 977      | 31       | 12                 | 32                              | 1 803              | 45       | 47                 | 15                              | 750                             | 22       | 0                  | 7 207                           | 239      | 7 446    | 7 674              | 3 21                            | 7 674    | 1 553    | 9 227              |                                 |                           |          |                    |                                 |                                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |          |                          |       |
| Total                        | 113 316         | 2044     | 1057               | 1312                            | 17 781   | 692      | 81                 | 398                             | 52 971             | 821      | 2084               | 305                             | 21 519                          | 520      | 31                 | 205 587                         | 4077     | 209 664  | 214 932            | 1 94                            | 214 932  | 49 424   | 264 356            |                                 |                           |          |                    |                                 |                                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |          |                          |       |
| Mean                         | 6.73            | 8.15     | 5.26               | 8.60                            | 7.89     | 8.20     | 11.59              | 8.71                            | 6.69               | 7.50     | 5.68               | 7.72                            | 6.77                            | 7.69     | 3.19               | 6.84                            | 7.01     | 6.84     | 7.01               | 6.84                            | 6.67     | 6.84     | 6.81               | 6.81                            |                           |          |                    |                                 |                                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |          |                          |       |
| SD                           | 6.88            | 8.03     | 6.03               | 8.40                            | 7.71     | 7.55     | 9.47               | 8.72                            | 6.93               | 7.71     | 6.26               | 7.71                            | 6.94                            | 7.53     | 4.34               | 7.01                            | 6.84     | 7.01     | 6.84               | 7.01                            | 6.84     | 6.67     | 6.84               | 6.81                            | 6.81                      |          |                    |                                 |                                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |          |                          |       |

<sup>†</sup>HBsAg prevalence (%) = Subtotal-2 ÷ (Subtotal-1 + Subtotal-2).

**TABLE 31. Hepatitis B virus surface antigen (HBsAg) prevalence and ages (all dialysis patients)**

| Age (years)              | HBs antibody: - |          |                    |                                 |          |          |                    |                                 |                    |          |                    |                                 | HBs antibody: +                 |          |                    |                                 |          |          |                    |                                 |          |          |                    |                                 | HBs antibody: unspecified |          |                    |                                 |                                 |  |  |  |  |  |  |  | HBs antibody: no information available |  |  |  |  |  |  |  |  |  |  |  | Subtotal | No information available | Total |
|--------------------------|-----------------|----------|--------------------|---------------------------------|----------|----------|--------------------|---------------------------------|--------------------|----------|--------------------|---------------------------------|---------------------------------|----------|--------------------|---------------------------------|----------|----------|--------------------|---------------------------------|----------|----------|--------------------|---------------------------------|---------------------------|----------|--------------------|---------------------------------|---------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----------|--------------------------|-------|
|                          | HBsAg: -        |          |                    |                                 | HBsAg: + |          |                    |                                 | HBsAg: unspecified |          |                    |                                 | HBsAg: no information available |          |                    |                                 | HBsAg: - |          |                    |                                 | HBsAg: + |          |                    |                                 | HBsAg: unspecified        |          |                    |                                 | HBsAg: no information available |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |          |                          |       |
|                          | HBsAg: -        | HBsAg: + | HBsAg: unspecified | HBsAg: no information available | HBsAg: - | HBsAg: + | HBsAg: unspecified | HBsAg: no information available | HBsAg: -           | HBsAg: + | HBsAg: unspecified | HBsAg: no information available | HBsAg: -                        | HBsAg: + | HBsAg: unspecified | HBsAg: no information available | HBsAg: - | HBsAg: + | HBsAg: unspecified | HBsAg: no information available | HBsAg: - | HBsAg: + | HBsAg: unspecified | HBsAg: no information available | HBsAg: -                  | HBsAg: + | HBsAg: unspecified | HBsAg: no information available |                                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |          |                          |       |
| <15                      | 34              | 0        | 2                  | 0                               | 0        | 0        | 0                  | 0                               | 0                  | 11       | 0                  | 8                               | 0                               | 13       | 0                  | 0                               | 58       | 0        | 68                 | 0.00                            | 68       | 38       | 106                |                                 |                           |          |                    |                                 |                                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |          |                          |       |
| 15-29                    | 775             | 7        | 12                 | 4                               | 19       | 6        | 6                  | 0                               | 1                  | 354      | 1                  | 20                              | 3                               | 148      | 1                  | 0                               | 1 296    | 15       | 1 351              | 1.14                            | 1 351    | 346      | 1 697              |                                 |                           |          |                    |                                 |                                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |          |                          |       |
| 30-44                    | 7 765           | 95       | 64                 | 104                             | 457      | 34       | 0                  | 11                              | 3 250              | 45       | 142                | 10                              | 12 800                          | 27       | 1                  | 12 752                          | 201      | 12 953   | 13 285             | 1.55                            | 13 285   | 3 136    | 16 421             |                                 |                           |          |                    |                                 |                                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |          |                          |       |
| 45-59                    | 29 404          | 694      | 246                | 381                             | 3 970    | 215      | 18                 | 95                              | 13 065             | 266      | 526                | 89                              | 55 477                          | 159      | 8                  | 51 986                          | 1 334    | 53 320   | 54 683             | 2.50                            | 54 683   | 12 758   | 67 441             |                                 |                           |          |                    |                                 |                                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |          |                          |       |
| 60-74                    | 48 761          | 950      | 463                | 548                             | 8 487    | 311      | 47                 | 186                             | 23 304             | 383      | 899                | 151                             | 93 111                          | 250      | 16                 | 89 863                          | 1 894    | 91 757   | 94 067             | 2.06                            | 94 067   | 21 254   | 115 321            |                                 |                           |          |                    |                                 |                                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |          |                          |       |
| 75-89                    | 25 508          | 289      | 257                | 264                             | 4 626    | 120      | 16                 | 99                              | 12 471             | 117      | 465                | 50                              | 50 000                          | 76       | 5                  | 47 605                          | 602      | 48 207   | 49 363             | 1.25                            | 49 363   | 11 365   | 60 728             |                                 |                           |          |                    |                                 |                                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |          |                          |       |
| ≥90                      | 1 067           | 9        | 13                 | 11                              | 222      | 6        | 0                  | 6                               | 515                | 9        | 24                 | 2                               | 220                             | 7        | 1                  | 2 024                           | 31       | 2 055    | 2 112              | 1.51                            | 2 112    | 524      | 2 636              |                                 |                           |          |                    |                                 |                                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |          |                          |       |
| Subtotal                 | 113 314         | 2044     | 1057               | 1312                            | 17 781   | 692      | 81                 | 398                             | 52 970             | 821      | 2084               | 305                             | 21 519                          | 520      | 31                 | 205 584                         | 4077     | 209 661  | 214 929            | 1.94                            | 214 929  | 49 421   | 264 350            |                                 |                           |          |                    |                                 |                                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |          |                          |       |
| No information available | 2               | 0        | 0                  | 0                               | 0        | 0        | 0                  | 0                               | 0                  | 1        | 0                  | 0                               | 0                               | 0        | 0                  | 0                               | 3        | 0        | 3                  | 0.00                            | 3        | 3        | 6                  |                                 |                           |          |                    |                                 |                                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |          |                          |       |
| Total                    | 113 316         | 2044     | 1057               | 1312                            | 17 781   | 692      | 81                 | 398                             | 52 971             | 821      | 2084               | 305                             | 21 519                          | 520      | 31                 | 205 587                         | 4077     | 209 664  | 214 932            | 1.94                            | 214 932  | 49 424   | 264 356            |                                 |                           |          |                    |                                 |                                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |          |                          |       |
| Mean                     | 64.53           | 62.89    | 65.06              | 63.58                           | 67.17    | 63.66    | 66.25              | 66.93                           | 65.07              | 62.83    | 64.07              | 63.83                           | 64.90                           | 63.21    | 65.94              | 64.89                           | 64.78    | 64.87    | 64.89              | 64.78                           | 64.87    | 64.89    | 64.78              | 64.87                           |                           |          |                    |                                 |                                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |          |                          |       |
| SD                       | 12.86           | 11.10    | 13.21              | 12.64                           | 11.09    | 11.68    | 10.07              | 11.39                           | 12.68              | 11.39    | 13.69              | 11.53                           | 12.72                           | 11.51    | 10.64              | 12.66                           | 12.89    | 12.71    | 12.66              | 12.89                           | 12.71    | 12.89    | 12.71              | 12.89                           |                           |          |                    |                                 |                                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |          |                          |       |

<sup>†</sup>HBsAg prevalence (%) = Subtotal-2 ÷ (Subtotal-1 + Subtotal-2).

**TABLE 32. Hepatitis B virus surface antigen (HBsAg) prevalence and primary diseases (all dialysis patients)**

| Primary disease   | HBs antibody: -    |          |                                 |          | HBs antibody: +    |          |                                 |          | HBs antibody: unspecified |          |                                 |          | HBs antibody: no information available |          |                                 |          | Subtotal | No information available | Total |         |        |         |
|---|--------------------|----------|---------------------------------|----------|--------------------|----------|---------------------------------|----------|---------------------------|----------|---------------------------------|----------|--|----------|---------------------------------|----------|----------|--------------------------|-------|---------|--------|---------|
|   | HBsAg: unspecified |          | HBsAg: no information available |          | HBsAg: unspecified |          | HBsAg: no information available |          | HBsAg: unspecified        |          | HBsAg: no information available |          | HBsAg: unspecified                     |          | HBsAg: no information available |          |          |                          |       |         |        |         |
|   | HBsAg: +           | HBsAg: - | HBsAg: +                        | HBsAg: - | HBsAg: +           | HBsAg: - | HBsAg: +                        | HBsAg: - | HBsAg: +                  | HBsAg: - | HBsAg: +                        | HBsAg: - | HBsAg: +                               | HBsAg: - | HBsAg: +                        | HBsAg: - |          |                          |       |         |        |         |
| Kidney and urinary tract tuberculosis                     | 158                | 7        | 0                               | 0        | 33                 | 2        | 1                               | 1        | 84                        | 2        | 3                               | 0        | 22                                     | 0        | 0                               | 297      | 11       | 308                      | 3.57  | 313     | 79     | 392     |
| Nephropathy of pregnancy/pregnancy toxemia                | 772                | 17       | 8                               | 13       | 137                | 7        | 4                               | 7        | 314                       | 9        | 14                              | 1        | 155                                    | 8        | 0                               | 1 378    | 41       | 1 419                    | 2.89  | 1 466   | 309    | 1 775   |
| Gouty kidney  | 549                | 10       | 3                               | 6        | 100                | 6        | 0                               | 0        | 242                       | 4        | 11                              | 1        | 113                                    | 2        | 0                               | 1 004    | 22       | 1 026                    | 2.14  | 1 047   | 210    | 1 257   |
| Other nephritides that cannot be classified               | 512                | 11       | 3                               | 4        | 77                 | 4        | 0                               | 2        | 212                       | 4        | 10                              | 1        | 114                                    | 1        | 0                               | 915      | 20       | 935                      | 2.14  | 955     | 259    | 1 214   |
| Polycystic kidney   | 3 858              | 72       | 32                              | 40       | 657                | 21       | 1                               | 14       | 1 866                     | 33       | 54                              | 7        | 735                                    | 29       | 0                               | 7 116    | 155      | 7 271                    | 2.13  | 7 419   | 1 501  | 8 920   |
| Others  | 2 111              | 49       | 21                              | 24       | 311                | 9        | 1                               | 3        | 851                       | 14       | 49                              | 8        | 323                                    | 6        | 0                               | 3 596    | 78       | 3 674                    | 2.12  | 3 780   | 945    | 4 725   |
| Chronic glomerulonephritis                                | 45 532             | 892      | 397                             | 603      | 7 356              | 306      | 46                              | 151      | 21 333                    | 336      | 826                             | 151      | 8 592                                  | 223      | 13                              | 82 813   | 1757     | 84 570                   | 2.08  | 86 757  | 19 947 | 106 704 |
| Obstructive urinary tract disease                         | 285                | 6        | 3                               | 2        | 52                 | 1        | 0                               | 0        | 145                       | 1        | 5                               | 0        | 46                                     | 3        | 0                               | 528      | 11       | 539                      | 2.04  | 549     | 143    | 692     |
| Undetermined  | 8351               | 140      | 78                              | 67       | 1 357              | 52       | 1                               | 15       | 3 555                     | 71       | 234                             | 12       | 1 429                                  | 30       | 3                               | 14 692   | 293      | 14 985                   | 1.96  | 15 395  | 4 058  | 19 453  |
| Reintroduction after transplantation                      | 782                | 17       | 12                              | 8        | 111                | 4        | 0                               | 4        | 384                       | 6        | 30                              | 4        | 152                                    | 1        | 0                               | 1 429    | 28       | 1 457                    | 1.92  | 1 515   | 379    | 1 894   |
| Myeloma   | 87                 | 1        | 1                               | 0        | 10                 | 1        | 0                               | 0        | 39                        | 1        | 1                               | 1        | 19                                     | 0        | 0                               | 155      | 3        | 158                      | 1.90  | 161     | 46     | 207     |
| Diabetic nephropathy                                      | 38 088             | 656      | 396                             | 425      | 5 615              | 216      | 19                              | 140      | 17 888                    | 268      | 656                             | 95       | 7 448                                  | 164      | 9                               | 69 039   | 1304     | 70 343                   | 1.85  | 72 083  | 16 175 | 88 258  |
| Chronic pyelonephritis                                    | 1 442              | 26       | 8                               | 18       | 237                | 5        | 0                               | 5        | 556                       | 9        | 14                              | 1        | 215                                    | 2        | 1                               | 2 450    | 42       | 2 492                    | 1.69  | 2 539   | 599    | 3 138   |
| Systemic lupus erythematosus nephritis                    | 944                | 11       | 12                              | 11       | 117                | 6        | 0                               | 5        | 437                       | 8        | 13                              | 4        | 215                                    | 4        | 1                               | 1 713    | 29       | 1 742                    | 1.66  | 1 788   | 473    | 2 261   |
| Hypoplastic kidney  | 243                | 3        | 4                               | 1        | 23                 | 2        | 0                               | 0        | 107                       | 1        | 9                               | 1        | 46                                     | 1        | 0                               | 419      | 7        | 426                      | 1.64  | 441     | 107    | 548     |
| Nephrosclerosis   | 7 208              | 99       | 64                              | 66       | 1 218              | 37       | 6                               | 35       | 3 749                     | 46       | 119                             | 11       | 1 413                                  | 37       | 2                               | 13 588   | 219      | 13 807                   | 1.59  | 14 110  | 3 034  | 17 144  |
| Malignant hypertension                                    | 875                | 12       | 2                               | 14       | 139                | 5        | 1                               | 9        | 333                       | 3        | 8                               | 3        | 151                                    | 4        | 0                               | 1 498    | 24       | 1 522                    | 1.58  | 1 559   | 397    | 1 956   |
| Renal failure due to congenital abnormality of metabolism | 103                | 3        | 4                               | 0        | 16                 | 0        | 0                               | 0        | 56                        | 0        | 1                               | 0        | 19                                     | 0        | 0                               | 194      | 3        | 197                      | 1.52  | 202     | 60     | 262     |
| Kidney and urinary tract tumor                            | 298                | 6        | 1                               | 3        | 43                 | 2        | 0                               | 3        | 138                       | 0        | 5                               | 0        | 54                                     | 0        | 0                               | 533      | 8        | 541                      | 1.48  | 553     | 91     | 644     |
| Amyloid kidney  | 200                | 2        | 1                               | 1        | 32                 | 0        | 1                               | 1        | 115                       | 1        | 4                               | 1        | 43                                     | 1        | 0                               | 390      | 4        | 394                      | 1.02  | 403     | 110    | 513     |
| Rapidly progressive glomerulonephritis                    | 656                | 3        | 7                               | 4        | 100                | 3        | 0                               | 3        | 410                       | 3        | 13                              | 2        | 160                                    | 4        | 2                               | 1 326    | 13       | 1 339                    | 0.97  | 1 370   | 372    | 1 742   |
| Kidney and urinary tract stone                            | 236                | 1        | 0                               | 2        | 37                 | 2        | 0                               | 0        | 130                       | 0        | 4                               | 1        | 54                                     | 0        | 0                               | 457      | 3        | 460                      | 0.65  | 467     | 85     | 552     |
| Subtotal  | 113 290            | 2044     | 1057                            | 1312     | 17 778             | 691      | 81                              | 398      | 52 944                    | 820      | 2083                            | 305      | 21 518                                 | 520      | 31                              | 205 530  | 4075     | 209 605                  | 1.94  | 214 872 | 49 379 | 264 251 |
| No information available                                  | 26                 | 0        | 0                               | 0        | 3                  | 1        | 0                               | 0        | 27                        | 1        | 1                               | 0        | 1                                      | 0        | 0                               | 57       | 2        | 59                       | 3.39  | 60      | 45     | 105     |
| Total   | 113 316            | 2044     | 1057                            | 1312     | 17 781             | 692      | 81                              | 398      | 52 971                    | 821      | 2084                            | 305      | 21 519                                 | 520      | 31                              | 205 587  | 4077     | 209 664                  | 1.94  | 214 932 | 49 424 | 264 356 |

<sup>†</sup>HBsAg prevalence (%) = Subtotal-2 ÷ (Subtotal-1 + Subtotal-2).



**TABLE 33.** Changes in pre-dialysis hemoglobin concentration (all dialysis patients)

|                                 | Pre-dialysis hemoglobin concentration (g/dL) |               |               |               |               |              |                 | Subtotal | No information available | Total | Mean | SD |
|---------------------------------|--|---------------|---------------|---------------|---------------|--------------|-----------------|----------|--------------------------|-------|------|----|
|                                 | <8.0   | 8.0-8.9       | 9.0-9.9       | 10.0-10.9     | 11.0-11.9     | ≥12.0        |                 |          |                          |       |      |    |
| Patients at the end of 2005 (%) | 6564 (4.8)                                   | 12 707 (9.3)  | 33 785 (24.8) | 45 231 (33.2) | 26 608 (19.5) | 11 298 (8.3) | 136 193 (100.0) | 31 919   | 168 112                  | 10.23 | 1.37 |    |
| Patients at the end of 2006 (%) | 9529 (4.4)                                   | 21 622 (10.0) | 54 878 (25.4) | 71 654 (33.1) | 40 619 (18.8) | 17 876 (8.3) | 216 178 (100.0) | 33 779   | 249 957                  | 10.23 | 1.33 |    |
| Patients at the end of 2007 (%) | 9604 (4.2)                                   | 21 294 (9.3)  | 55 658 (24.3) | 77 395 (33.8) | 45 918 (20.1) | 18 973 (8.3) | 228 842 (100.0) | 35 514   | 264 356                  | 10.27 | 1.32 |    |

**TABLE 34.** Pre-dialysis hemoglobin and gender (all dialysis patients)

| Gender                   | Pre-dialysis hemoglobin concentration (g/dL) |            |              |               |               |               |              |            |                 |        | Subtotal | No information available | Total | Mean | SD |
|--------------------------|--|------------|--------------|---------------|---------------|---------------|--------------|------------|-----------------|--------|----------|--------------------------|-------|------|----|
|                          | <7.0   | 7.0-7.9    | 8.0-8.9      | 9.0-9.9       | 10.0-10.0     | 11.0-11.9     | 12.0-12.9    | ≥13.0      |                 |        |          |                          |       |      |    |
| Male (%)                 | 1790 (1.3)                                   | 3788 (2.7) | 11 927 (8.5) | 31 750 (22.6) | 47 152 (33.6) | 30 461 (21.7) | 9 823 (7.0)  | 3733 (2.7) | 140 424 (100.0) | 21 799 | 162 223  | 10.36                    | 1.35  |      |    |
| Female (%)               | 1189 (1.3)                                   | 2836 (3.2) | 9 363 (10.6) | 23 899 (27.0) | 30 237 (34.2) | 15 456 (17.5) | 4 257 (4.8)  | 1160 (1.3) | 88 397 (100.0)  | 13 715 | 102 112  | 10.13                    | 1.27  |      |    |
| Subtotal (%)             | 2979 (1.3)                                   | 6624 (2.9) | 21 290 (9.3) | 55 649 (24.3) | 77 389 (33.8) | 45 917 (20.1) | 14 080 (6.2) | 4893 (2.1) | 228 821 (100.0) | 35 514 | 264 335  | 10.27                    | 1.32  |      |    |
| No information available | 0  | 1          | 4            | 9             | 6             | 1             | 0            | 0          | 21              | 0      | 21       | 9.5                      | 0.88  |      |    |
| Total (%)                | 2979 (1.3)                                   | 6625 (2.9) | 21 294 (9.3) | 55 658 (24.3) | 77 395 (33.8) | 45 918 (20.1) | 14 080 (6.2) | 4893 (2.1) | 228 842 (100.0) | 35 514 | 264 356  | 10.27                    | 1.32  |      |    |

**TABLE 35. Pre-dialysis hemoglobin concentrations and age (all dialysis patients)**

| Age (years)              | Pre-dialysis hemoglobin concentration (g/dL) |            |             |              |              |              |             |            |                |       | Subtotal | No information available | Total | Mean | SD |
|--------------------------|--|------------|-------------|--------------|--------------|--------------|-------------|------------|----------------|-------|----------|--------------------------|-------|------|----|
|                          | Less than 7                                  | 7-         | 8-          | 9-           | 10-          | 11-          | 12-         | 13-        | 13-            | 13-   |          |                          |       |      |    |
| <15 (%)                  | 3 (4.9)                                      | 4 (6.6)    | 6 (9.8)     | 16 (26.2)    | 10 (16.4)    | 11 (18.0)    | 6 (9.8)     | 5 (8.2)    | 61 (100.0)     | 45    | 106      | 10.29                    | 2.09  |      |    |
| 15-29 (%)                | 15 (1.1)                                     | 26 (1.8)   | 97 (6.8)    | 305 (21.4)   | 466 (32.7)   | 365 (25.6)   | 116 (8.1)   | 34 (2.4)   | 1424 (100.0)   | 273   | 1697     | 10.5                     | 1.31  |      |    |
| 30-44 (%)                | 126 (0.9)                                    | 284 (2.0)  | 1026 (7.3)  | 2901 (20.5)  | 4744 (33.6)  | 3415 (24.2)  | 1181 (8.4)  | 456 (3.2)  | 14133 (100.0)  | 2288  | 16421    | 10.51                    | 1.32  |      |    |
| 45-59 (%)                | 664 (1.1)                                    | 1385 (2.4) | 4546 (7.8)  | 13038 (22.3) | 19962 (34.2) | 12754 (21.8) | 4365 (7.5)  | 1661 (2.8) | 58375 (100.0)  | 9066  | 67441    | 10.41                    | 1.34  |      |    |
| 60-74 (%)                | 1284 (1.3)                                   | 2858 (2.9) | 9391 (9.4)  | 24844 (24.8) | 34269 (34.2) | 19779 (19.7) | 5806 (5.8)  | 1963 (2.0) | 100194 (100.0) | 15127 | 115321   | 10.25                    | 1.3   |      |    |
| 75-89 (%)                | 844 (1.6)                                    | 1964 (3.7) | 5931 (11.3) | 13957 (26.6) | 17222 (32.9) | 9230 (17.6)  | 2521 (4.8)  | 752 (1.4)  | 52421 (100.0)  | 8307  | 60728    | 10.09                    | 1.31  |      |    |
| ≥90 (%)                  | 43 (1.9)                                     | 104 (4.7)  | 297 (13.3)  | 596 (26.7)   | 720 (32.3)   | 364 (16.3)   | 85 (3.8)    | 22 (1.0)   | 2231 (100.0)   | 405   | 2636     | 9.96                     | 1.34  |      |    |
| Subtotal (%)             | 2979 (1.3)                                   | 6625 (2.9) | 21294 (9.3) | 55657 (24.3) | 77393 (33.8) | 45918 (20.1) | 14080 (6.2) | 4893 (2.1) | 228839 (100.0) | 35511 | 264350   | 10.27                    | 1.32  |      |    |
| No information available | 0  | 0          | 0           | 1            | 2            | 0            | 0           | 0          | 3              | 3     | 6        | 10.27                    | 0.35  |      |    |
| Total (%)                | 2979 (1.3)                                   | 6625 (2.9) | 21294 (9.3) | 55658 (24.3) | 77395 (33.8) | 45918 (20.1) | 14080 (6.2) | 4893 (2.1) | 228842 (100.0) | 35514 | 264356   | 10.27                    | 1.32  |      |    |
| Mean                     | 66.91  | 67.31      | 66.82       | 65.87        | 64.76        | 63.63        | 62.43       | 61.33      | 64.88          | 64.79 | 64.87    |                          |       |      |    |
| SD                       | 12.51  | 12.48      | 12.49       | 12.42        | 12.50        | 12.83        | 12.92       | 12.82      | 12.65          | 13.08 | 12.71    |                          |       |      |    |

iron-binding capacity, transferrin saturation level, and serum ferritin concentration in all the dialysis patients over the past three years. To easily understand the changes, the percentages of the mean values in each year with respect to those in 2005 are also given.

As mentioned above, little change was observed in hemoglobin concentration; however, the serum iron concentration, transferrin saturation level, and serum ferritin concentration tended to increase from 2005 to 2006. In contrast, the total iron-binding capacity decreased. These changes may be due to the inclusion of the price of erythropoietin in the artificial kidney technical fee, which was determined on the basis of the system for medical treatment fee revised in 2006. That is, with the revision of the system, it was considered that a sufficient amount of iron has been supplemented to dialysis patients.

6. Transferrin saturation level

Table 38 shows the relationship between hemoglobin concentration and transferrin saturation level. Patients with high hemoglobin concentrations tended to have high transferrin saturation levels.

7. Serum ferritin concentration

Table 39 shows the relationship between hemoglobin concentration and serum ferritin concentration. Patients with high hemoglobin concentrations tended to have low serum ferritin concentrations.

In anemia therapies, both the serum ferritin concentration and transferrin saturation level are regarded as indices reflecting iron sufficiency. In general, it is understood that the decrease in either of the indices indicates the necessity of iron supplementation. Results of this survey, however, showed that the transferrin saturation level increased with increasing hemoglobin concentration, whereas the serum ferritin concentration decreased with increasing hemoglobin concentration. These findings suggest differences in the roles of iron metabolism between the transferrin saturation level and serum ferritin concentration.

8. Serum C-reactive protein concentration

Table 40 shows the relationship between hemoglobin concentration and serum C-reactive protein (CRP) concentration. For patients with hemoglobin concentrations <10.0 g/dL, the percentage of patients with a high serum CRP concentration increased with decreasing hemoglobin concentration.

D. History of hip fracture

Conventionally, the history of fracture in dialysis patients has not been surveyed; this survey was the

**TABLE 36.** Pre-dialysis hemoglobin concentrations and primary disease (all dialysis patients)

| Primary disease   | Pre-dialysis hemoglobin concentration (g/dL) |               |               |                  |                  |                  |               |               |                   |        | Subtotal | No information available | Total | Mean | SD |
|---|--|---------------|---------------|------------------|------------------|------------------|---------------|---------------|-------------------|--------|----------|--------------------------|-------|------|----|
|   | <7.0   | 7.0-7.9       | 8.0-8.9       | 9.0-9.9          | 10.0-10.9        | 11.0-11.9        | 12.0-12.9     | ≥13.0         |                   |        |          |                          |       |      |    |
| Chronic glomerulonephritis                                | 1047<br>(1.1)                                | 2424<br>(2.6) | 7903<br>(8.5) | 22 132<br>(23.9) | 31 863<br>(34.4) | 19 189<br>(20.7) | 6113<br>(6.6) | 2071<br>(2.2) | 92 742<br>(100.0) | 13 962 | 1 06 704 | 10.33                    | 1.31  |      |    |
| Chronic pyelonephritis                                    | 31   | 80            | 256           | 654              | 918              | 547              | 172           | 53            | 427               |        | 3 138    | 10.27                    | 1.32  |      |    |
| Rapidly progressive glomerulonephritis                    | 23   | 57            | 132           | 357              | 466              | 293              | 95            | 26            | 1 449             | 293    | 1 742    | 10.23                    | 1.34  |      |    |
| Nephropathy of pregnancy/pregnancy toxemia                | 16   | 38            | 135           | 423              | 558              | 301              | 81            | 18            | 1 570             | 205    | 1 775    | 10.22                    | 1.18  |      |    |
| Other nephritides that cannot be classified               | 12   | 36            | 91            | 231              | 352              | 241              | 73            | 23            | 1 059             | 155    | 1 214    | 10.35                    | 1.35  |      |    |
| Polycystic kidney   | 77   | 181           | 611           | 1 843            | 2 592            | 1 670            | 605           | 301           | 7 880             | 1 040  | 8 920    | 10.45                    | 1.38  |      |    |
| Nephrosclerosis   | 199  | 456           | 1 455         | 3 787            | 5 119            | 2 892            | 767           | 260           | 14 935            | 2 209  | 17 144   | 10.20                    | 1.30  |      |    |
| Malignant hypertension                                    | 21   | 42            | 161           | 397              | 564              | 315              | 105           | 45            | 1 650             | 306    | 1 956    | 10.29                    | 1.38  |      |    |
| Diabetic nephropathy                                      | 1118   | 2388          | 7 796         | 18 979           | 25 626           | 14 771           | 4471          | 1553          | 76 702            | 11 556 | 88 258   | 10.22                    | 1.33  |      |    |
| Systemic lupus erythematosus nephritis                    | 31   | 67            | 194           | 504              | 632              | 362              | 96            | 32            | 1 918             | 343    | 2 261    | 10.14                    | 1.30  |      |    |
| Amyloid kidney  | 4  | 17            | 46            | 107              | 134              | 94               | 24            | 6             | 432               | 81     | 513      | 10.21                    | 1.32  |      |    |
| Gouty kidney  | 11   | 30            | 94            | 238              | 374              | 247              | 81            | 33            | 1 108             | 149    | 1 257    | 10.41                    | 1.34  |      |    |
| Renal failure due to congenital abnormality of metabolism | 3  | 4             | 19            | 51               | 71               | 52               | 15            | 6             | 221               | 41     | 262      | 10.38                    | 1.39  |      |    |
| Kidney and urinary tract tuberculosis                     | 2  | 10            | 42            | 100              | 97               | 54               | 19            | 8             | 332               | 60     | 392      | 10.14                    | 1.29  |      |    |
| Kidney and urinary tract stone                            | 9  | 15            | 45            | 125              | 160              | 92               | 27            | 7             | 480               | 72     | 552      | 10.17                    | 1.30  |      |    |
| Kidney and urinary tract tumor                            | 12   | 26            | 82            | 133              | 173              | 124              | 16            | 3             | 569               | 75     | 644      | 9.99                     | 1.28  |      |    |
| Obstructive urinary tract disease                         | 14   | 20            | 46            | 137              | 215              | 104              | 40            | 20            | 596               | 96     | 692      | 10.29                    | 1.40  |      |    |
| Myeloma   | 16   | 12            | 31            | 48               | 37               | 23               | 6             | 2             | 175               | 32     | 207      | 9.45                     | 1.57  |      |    |
| Hypoplastic kidney  | 5  | 8             | 40            | 98               | 162              | 114              | 34            | 11            | 472               | 76     | 548      | 10.43                    | 1.30  |      |    |
| Undetermined  | 220  | 523           | 1589          | 4 003            | 5 420            | 3251             | 898           | 296           | 16 200            | 3 253  | 19 453   | 10.22                    | 1.32  |      |    |
| Reintroduction after transplantation                      | 26   | 54            | 130           | 357              | 527              | 359              | 119           | 40            | 1 612             | 282    | 1 894    | 10.35                    | 1.39  |      |    |
| Others  | 82   | 134           | 391           | 935              | 1 304            | 812              | 221           | 77            | 3 956             | 769    | 4 725    | 10.20                    | 1.37  |      |    |
| Total   | 2979   | 6622          | 21 289        | 55 639           | 77 364           | 45 907           | 14 078        | 4891          | 228 769           | 35 482 | 264 251  | 10.27                    | 1.32  |      |    |
| No information available                                  | 0  | 3             | 5             | 19               | 31               | 11               | 2             | 2             | 73                | 32     | 105      | 10.22                    | 1.20  |      |    |
| Total   | 2979   | 6625          | 21 294        | 55 658           | 77 395           | 45 918           | 14 080        | 4893          | 228 842           | 35 514 | 264 356  | 10.27                    | 1.32  |      |    |

**TABLE 37.** Changes in the iron metabolism-related indices over the past three years (facility hemodialysis, hemodiafiltration, hemoadsorption)

|                 | Hemoglobin concentration (g/dL) |      |                           | Serum iron concentration (µg/dL) |                    |                           | Total iron-binding capacity (µg/dL) |       |                           | Transferrin saturation level (%) |       |                           | Serum ferritin concentration (ng/mL) |        |                           |
|-----------------|---------------------------------|------|---------------------------|----------------------------------|--------------------|---------------------------|-------------------------------------|-------|---------------------------|----------------------------------|-------|---------------------------|--------------------------------------|--------|---------------------------|
|                 | Mean                            | SD   | vs. 2005 <sup>†</sup> (%) | Mean                             | SD                 | vs. 2005 <sup>†</sup> (%) | Mean                                | SD    | vs. 2005 <sup>†</sup> (%) | Mean                             | SD    | vs. 2005 <sup>†</sup> (%) | Mean                                 | SD     | vs. 2005 <sup>†</sup> (%) |
|                 |                                 |      |                           |                                  |                    |                           |                                     |       |                           |                                  |       |                           |                                      |        |                           |
| The end of 2005 | 10.23                           | 1.37 | 100.00                    | 62.31                            | 29.38              | 100.00                    | 246.05                              | 64.38 | 100.00                    | 26.50                            | 13.82 | 100.00                    | 191.29                               | 329.38 | 100.00                    |
| The end of 2006 | 10.23                           | 1.33 | 100.00                    | 64.65                            | 30.28              | 103.76                    | 236.96                              | 60.73 | 96.31                     | 28.39                            | 14.60 | 107.13                    | 239.59                               | 383.29 | 125.25                    |
| The end of 2007 | 10.27                           | 1.32 | 100.39                    | 63.42 <sup>†</sup>               | 29.54 <sup>†</sup> | 101.78                    | 236.85                              | 60.73 | 96.26                     | 28.09                            | 14.42 | 106.00                    | 227.54                               | 349.56 | 118.95                    |

<sup>†</sup>The percentages of the mean values in each year with respect to those in 2005.

**TABLE 38.** Pre-dialysis hemoglobin concentrations and transferrin saturation levels (all dialysis patients)

| Transferrin saturation level (%) | Pre-dialysis hemoglobin concentration (g/dL) |             |              |               |               |               |              |            |                 |        |         |       | Subtotal | No information available | Total | Mean | SD |
|----------------------------------|--|-------------|--------------|---------------|---------------|---------------|--------------|------------|-----------------|--------|---------|-------|----------|--------------------------|-------|------|----|
|                                  | Pre-dialysis hemoglobin concentration (g/dL) |             |              |               |               |               |              |            |                 |        |         |       |          |                          |       |      |    |
|                                  | <7.0   | 7.0-7.9     | 8.0-8.9      | 9.0-9.9       | 10.0-10.9     | 11.0-11.9     | 12.0-12.9    | ≥13.0      |                 |        |         |       |          |                          |       |      |    |
| <10 (%)                          | 210 (2.9)                                    | 500 (7.0)   | 1 168 (16.3) | 1 855 (25.9)  | 1 903 (26.5)  | 1 064 (14.8)  | 364 (5.1)    | 111 (1.5)  | 7 175 (100.0)   | 55     | 7 230   | 9.83  | 1.47     |                          |       |      |    |
| 10-19 (%)                        | 530 (1.4)                                    | 1 270 (3.4) | 3 930 (10.5) | 9 616 (25.7)  | 12 110 (32.3) | 6 961 (18.6)  | 2 227 (5.9)  | 811 (2.2)  | 37 455 (100.0)  | 280    | 37 735  | 10.2  | 1.34     |                          |       |      |    |
| 20-29 (%)                        | 455 (0.9)                                    | 1 059 (2.0) | 4 011 (7.5)  | 12 659 (23.8) | 19 267 (36.2) | 11 424 (21.5) | 3 226 (6.1)  | 1055 (2.0) | 53 156 (100.0)  | 378    | 53 534  | 10.36 | 1.23     |                          |       |      |    |
| 30-39 (%)                        | 318 (1.0)                                    | 568 (1.8)   | 2 199 (6.9)  | 7 242 (22.9)  | 11 608 (36.6) | 7 099 (22.4)  | 2 035 (6.4)  | 617 (1.9)  | 31 686 (100.0)  | 204    | 31 890  | 10.4  | 1.25     |                          |       |      |    |
| 40-49 (%)                        | 140 (1.1)                                    | 241 (1.9)   | 997 (7.9)    | 2 791 (22.1)  | 4 411 (34.9)  | 2 860 (22.6)  | 894 (7.1)    | 299 (2.4)  | 12 633 (100.0)  | 85     | 12 718  | 10.41 | 1.31     |                          |       |      |    |
| 50-59 (%)                        | 60 (1.2)                                     | 125 (2.5)   | 444 (8.9)    | 1 150 (23.1)  | 1 652 (33.2)  | 1 056 (21.2)  | 356 (7.2)    | 131 (2.6)  | 4 974 (100.0)   | 26     | 5 000   | 10.36 | 1.35     |                          |       |      |    |
| ≥60 (%)                          | 159 (2.9)                                    | 265 (4.8)   | 609 (11.0)   | 1 332 (24.1)  | 1 665 (30.1)  | 1 022 (18.5)  | 371 (6.7)    | 110 (2.0)  | 5 533 (100.0)   | 33     | 5 566   | 10.1  | 1.48     |                          |       |      |    |
| Subtotal (%)                     | 1 872 (1.2)                                  | 4 028 (2.6) | 13 358 (8.8) | 36 645 (24.0) | 52 616 (34.5) | 31 486 (20.6) | 9 473 (6.2)  | 3134 (2.1) | 152 612 (100.0) | 1 061  | 153 673 | 10.3  | 1.3      |                          |       |      |    |
| No information available         | 1 107  | 2 597       | 7 936        | 19 013        | 24 779        | 14 432        | 4 607        | 1759       | 76 230          | 34 453 | 110 683 | 10.21 | 1.36     |                          |       |      |    |
| Total (%)                        | 2 979 (1.3)                                  | 6 625 (2.9) | 21 294 (9.3) | 55 658 (24.3) | 77 395 (33.8) | 45 918 (20.1) | 14 080 (6.2) | 4893 (2.1) | 228 842 (100.0) | 35 514 | 264 356 | 10.27 | 1.32     |                          |       |      |    |
| Mean                             | 28.89  | 26.48       | 26.78        | 27.59         | 28.32         | 28.73         | 28.95        | 28.53      | 28.10           | 26.88  | 28.09   | 10.27 | 1.32     |                          |       |      |    |
| SD                               | 20.17  | 18.34       | 16.06        | 14.50         | 13.67         | 13.69         | 14.67        | 14.58      | 14.43           | 13.62  | 14.42   | 10.27 | 1.32     |                          |       |      |    |

**TABLE 39.** Pre-dialysis hemoglobin concentrations and serum ferritin concentrations (all dialysis patients)

| Serum ferritin concentration (ng/mL) | Pre-dialysis hemoglobin concentration (g/dL) |            |              |               |               |               |              |            |                 |        | Subtotal | No information available | Total | Mean | SD |
|--------------------------------------|--|------------|--------------|---------------|---------------|---------------|--------------|------------|-----------------|--------|----------|--------------------------|-------|------|----|
|                                      | <7.0   | 7.0-7.9    | 8.0-8.9      | 9.0-9.9       | 10.0-10.9     | 11.0-11.9     | 12.0-12.9    | ≥13.0      |                 |        |          |                          |       |      |    |
| <25 (%)                              | 288 (1.2)                                    | 627 (2.7)  | 2 268 (9.6)  | 5 521 (23.3)  | 7 517 (31.8)  | 4 885 (20.6)  | 1 793 (7.6)  | 759 (3.2)  | 23 658 (100.0)  | 180    | 23 838   | 10.36                    | 1.38  |      |    |
| 25-49 (%)                            | 240 (1.0)                                    | 545 (2.3)  | 1 742 (7.5)  | 5 119 (22.0)  | 7 848 (33.8)  | 5 205 (22.4)  | 1 759 (7.6)  | 767 (3.3)  | 23 225 (100.0)  | 154    | 23 379   | 10.45                    | 1.35  |      |    |
| 50-99 (%)                            | 352 (1.0)                                    | 688 (2.0)  | 2 474 (7.4)  | 7 781 (23.1)  | 11 883 (35.4) | 7 471 (22.2)  | 2 221 (6.6)  | 744 (2.2)  | 33 614 (100.0)  | 239    | 33 853   | 10.39                    | 1.27  |      |    |
| 100-149 (%)                          | 282 (1.0)                                    | 592 (2.2)  | 2 141 (7.8)  | 6 569 (24.0)  | 9 920 (36.3)  | 5 809 (21.2)  | 1 580 (5.8)  | 460 (1.7)  | 27 353 (100.0)  | 199    | 27 552   | 10.32                    | 1.23  |      |    |
| 150-199 (%)                          | 221 (1.1)                                    | 465 (2.3)  | 1 707 (8.4)  | 5 064 (24.8)  | 7 222 (35.4)  | 4 287 (21.0)  | 1 146 (5.6)  | 288 (1.4)  | 20 400 (100.0)  | 156    | 20 556   | 10.29                    | 1.24  |      |    |
| 200-299 (%)                          | 302 (1.1)                                    | 730 (2.7)  | 2 487 (9.2)  | 6 961 (25.6)  | 9 590 (35.3)  | 5 304 (19.5)  | 1 421 (5.2)  | 379 (1.4)  | 27 174 (100.0)  | 227    | 27 401   | 10.22                    | 1.24  |      |    |
| 300-499 (%)                          | 328 (1.4)                                    | 796 (3.3)  | 2 526 (10.4) | 6 138 (25.4)  | 8 250 (34.1)  | 4 482 (18.5)  | 1 300 (5.4)  | 355 (1.5)  | 24 175 (100.0)  | 190    | 24 365   | 10.17                    | 1.3   |      |    |
| 500-999 (%)                          | 280 (1.9)                                    | 660 (4.5)  | 1 750 (11.8) | 3 771 (25.5)  | 4 561 (30.8)  | 2 617 (17.7)  | 859 (5.8)    | 287 (1.9)  | 14 785 (100.0)  | 142    | 14 927   | 10.1                     | 1.4   |      |    |
| ≥1000 (%)                            | 200 (3.8)                                    | 293 (5.6)  | 659 (12.7)   | 1 164 (22.4)  | 1 428 (27.5)  | 919 (17.7)    | 373 (7.2)    | 161 (3.1)  | 5 197 (100.0)   | 57     | 5 254    | 10.05                    | 1.63  |      |    |
| Subtotal (%)                         | 2493 (1.2)                                   | 5396 (2.7) | 17 754 (8.9) | 48 088 (24.1) | 68 219 (34.2) | 40 979 (20.5) | 12 452 (6.2) | 4200 (2.1) | 199 581 (100.0) | 1 544  | 201 125  | 10.29                    | 1.31  |      |    |
| No information available (%)         | 486  | 1229       | 3540         | 7 570         | 9 176         | 4 939         | 1 628        | 693        | 29 261          | 33 970 | 63 231   | 10.11                    | 1.39  |      |    |
| Total (%)                            | 2979 (1.3)                                   | 6625 (2.9) | 21 294 (9.3) | 55 658 (24.3) | 77 395 (33.8) | 45 918 (20.1) | 14 080 (6.2) | 4893 (2.1) | 228 842 (100.0) | 35 514 | 264 356  | 10.27                    | 1.32  |      |    |
| Mean                                 | 361.73                                       | 325.41     | 268.15       | 228.58        | 216.2         | 209.14        | 216.83       | 217.12     | 227.18          | 273.71 | 227.54   |                          |       |      |    |
| SD                                   | 631.31                                       | 562.23     | 404.59       | 320.89        | 324.95        | 314.91        | 341.85       | 420.43     | 348.01          | 510.53 | 349.56   |                          |       |      |    |

**TABLE 40.** Pre-dialysis hemoglobin concentrations and serum C-reactive protein (CRP) concentrations (all dialysis patients)

| Serum CRP concentration (mg/dL) | Pre-dialysis hemoglobin concentration (g/dL) |         |         |         |           |           |           |       |         |        | Subtotal | No information available | Total | Mean | SD |
|---------------------------------|--|---------|---------|---------|-----------|-----------|-----------|-------|---------|--------|----------|--------------------------|-------|------|----|
|                                 | <7.0   | 7.0-7.9 | 8.0-8.9 | 9.0-9.9 | 10.0-10.9 | 11.0-11.9 | 12.0-12.9 | ≥13.0 |         |        |          |                          |       |      |    |
| <0.2                            | 784  | 1753    | 7 063   | 23 384  | 36 168    | 21 736    | 6 208     | 1862  | 98 958  | 665    | 99 623   | 10.39                    | 1.21  |      |    |
| (%)                             | (0.8)  | (1.8)   | (7.1)   | (23.6)  | (36.5)    | (22.0)    | (6.3)     | (1.9) | (100.0) |        |          |                          |       |      |    |
| 0.2-0.4                         | 359  | 880     | 3 053   | 8 187   | 11 831    | 7 261     | 2 372     | 840   | 34 783  | 243    | 35 026   | 10.34                    | 1.32  |      |    |
| (%)                             | (1.0)  | (2.5)   | (8.8)   | (23.5)  | (34.0)    | (20.9)    | (6.8)     | (2.4) | (100.0) |        |          |                          |       |      |    |
| 0.5-0.9                         | 246  | 641     | 1 771   | 4 125   | 5 243     | 2 955     | 936       | 338   | 16 255  | 130    | 16 385   | 10.16                    | 1.36  |      |    |
| (%)                             | (1.5)  | (3.9)   | (10.9)  | (25.4)  | (32.3)    | (18.2)    | (5.8)     | (2.1) | (100.0) |        |          |                          |       |      |    |
| 1.0-1.9                         | 253  | 575     | 1 421   | 2 694   | 3 027     | 1 696     | 574       | 207   | 10 447  | 79     | 10 526   | 9.99                     | 1.46  |      |    |
| (%)                             | (2.4)  | (5.5)   | (13.6)  | (25.8)  | (29.0)    | (16.2)    | (5.5)     | (2.0) | (100.0) |        |          |                          |       |      |    |
| 2.0-3.9                         | 197  | 452     | 1 073   | 1 633   | 1 746     | 826       | 278       | 113   | 6 318   | 47     | 6 365    | 9.79                     | 1.48  |      |    |
| (%)                             | (3.1)  | (7.2)   | (17.0)  | (25.8)  | (27.6)    | (13.1)    | (4.4)     | (1.8) | (100.0) |        |          |                          |       |      |    |
| 4.0-5.9                         | 108  | 220     | 440     | 632     | 555       | 275       | 94        | 38    | 2 362   | 19     | 2 381    | 9.59                     | 1.56  |      |    |
| (%)                             | (4.6)  | (9.3)   | (18.6)  | (26.8)  | (23.5)    | (11.6)    | (4.0)     | (1.6) | (100.0) |        |          |                          |       |      |    |
| 6.0-7.9                         | 64   | 144     | 232     | 289     | 283       | 122       | 40        | 23    | 1 197   | 11     | 1 208    | 9.47                     | 1.59  |      |    |
| (%)                             | (5.3)  | (12.0)  | (19.4)  | (24.1)  | (23.6)    | (10.2)    | (3.3)     | (1.9) | (100.0) |        |          |                          |       |      |    |
| 8.0-9.9                         | 46   | 85      | 157     | 176     | 133       | 63        | 26        | 11    | 697     | 8      | 705      | 9.3                      | 1.62  |      |    |
| (%)                             | (6.6)  | (12.2)  | (22.5)  | (25.3)  | (19.1)    | (9.0)     | (3.7)     | (1.6) | (100.0) |        |          |                          |       |      |    |
| 10.0-14.9                       | 59   | 108     | 139     | 181     | 167       | 85        | 31        | 12    | 782     | 6      | 788      | 9.39                     | 1.68  |      |    |
| (%)                             | (7.5)  | (13.8)  | (17.8)  | (23.1)  | (21.4)    | (10.9)    | (4.0)     | (1.5) | (100.0) |        |          |                          |       |      |    |
| ≥15.0                           | 41   | 69      | 109     | 133     | 122       | 58        | 18        | 8     | 558     | 4      | 562      | 9.35                     | 1.64  |      |    |
| (%)                             | (7.3)  | (12.4)  | (19.5)  | (23.8)  | (21.9)    | (10.4)    | (3.2)     | (1.4) | (100.0) |        |          |                          |       |      |    |
| Subtotal                        | 2157   | 4927    | 15 458  | 41 434  | 59 275    | 35 077    | 10 577    | 3452  | 172 357 | 1 212  | 173 569  | 10.28                    | 1.31  |      |    |
| (%)                             | (1.3)  | (2.9)   | (9.0)   | (24.0)  | (34.4)    | (20.4)    | (6.1)     | (2.0) | (100.0) |        |          |                          |       |      |    |
| No information available        | 822  | 1698    | 5 836   | 14 224  | 18 120    | 10 841    | 3 503     | 1441  | 56 485  | 34 302 | 90 787   | 10.24                    | 1.37  |      |    |
| Total                           | 2979   | 6625    | 21 294  | 55 658  | 77 395    | 45 918    | 14 080    | 4893  | 228 842 | 35 514 | 264 356  | 10.27                    | 1.32  |      |    |
| (%)                             | (1.3)  | (2.9)   | (9.3)   | (24.3)  | (33.8)    | (20.1)    | (6.2)     | (2.1) | (100.0) |        |          |                          |       |      |    |
| Mean                            | 1.98   | 1.70    | 1.10    | 0.66    | 0.50      | 0.45      | 0.49      | 0.58  | 0.64    | 0.82   | 0.64     |                          |       |      |    |
| SD                              | 3.99   | 3.34    | 2.80    | 2.09    | 1.65      | 1.60      | 1.70      | 1.80  | 2.02    | 4.11   | 2.04     |                          |       |      |    |

**TABLE 41.** History of hip fracture and age (all dialysis patients)

| History of hip fracture          | Age (years) |       |       |        |        |        |        |        |        |         | Subtotal | No information available | Total | Mean  | SD |  |
|----------------------------------|-------------|-------|-------|--------|--------|--------|--------|--------|--------|---------|----------|--------------------------|-------|-------|----|--|
|                                  | <20         | 20-29 | 30-39 | 40-49  | 50-59  | 60-69  | 70-79  | 80-89  | ≥90    |         |          |                          |       |       |    |  |
| <b>Male</b>                      |             |       |       |        |        |        |        |        |        |         |          |                          |       |       |    |  |
| Without a history                | 87          | 743   | 4082  | 9 849  | 26 312 | 35 719 | 31 639 | 10 892 | 790    | 120 113 | 0        | 120 113                  | 64.06 | 12.49 |    |  |
| With a history                   | 1           | 2     | 13    | 51     | 226    | 435    | 621    | 328    | 40     | 1 717   | 0        | 1 717                    | 70.51 | 11.11 |    |  |
| Subtotal                         | 88          | 745   | 4095  | 9 900  | 26 538 | 36 154 | 32 260 | 11 220 | 830    | 121 830 | 0        | 121 830                  | 64.15 | 12.49 |    |  |
| Fracture prevalence <sup>†</sup> | 114.9       | 26.9  | 31.8  | 51.8   | 85.9   | 121.8  | 196.3  | 301.1  | 506.3  | 142.9   | -        | 142.9                    |       |       |    |  |
| Unspecified                      | 0           | 7     | 40    | 77     | 214    | 345    | 354    | 109    | 7      | 1 153   | 0        | 1 153                    | 65.22 | 12.29 |    |  |
| No information available         | 47          | 252   | 1299  | 3 206  | 8 474  | 11 581 | 10 410 | 3 660  | 307    | 39 236  | 4        | 39 240                   | 64.17 | 12.60 |    |  |
| Total                            | 135         | 1004  | 5434  | 13 183 | 35 226 | 48 080 | 43 024 | 14 989 | 1144   | 162 219 | 4        | 162 223                  | 64.16 | 12.52 |    |  |
| <b>Female</b>                    |             |       |       |        |        |        |        |        |        |         |          |                          |       |       |    |  |
| Without a history                | 62          | 412   | 2052  | 5 165  | 14 909 | 20 877 | 19 726 | 9 801  | 996    | 74 000  | 1        | 74 001                   | 65.75 | 12.83 |    |  |
| With a history                   | 1           | 4     | 16    | 29     | 181    | 441    | 941    | 779    | 117    | 2 509   | 0        | 2 509                    | 74.60 | 10.65 |    |  |
| Subtotal                         | 63          | 416   | 2068  | 5 194  | 15 090 | 21 318 | 20 667 | 10 580 | 1113   | 76 509  | 1        | 76 510                   | 66.04 | 12.86 |    |  |
| Fracture prevalence <sup>†</sup> | 161.3       | 97.1  | 78.0  | 56.1   | 121.4  | 211.2  | 477.0  | 794.8  | 1174.7 | 339.1   | 0.0      | 339.0                    |       |       |    |  |
| Unspecified                      | 1           | 4     | 17    | 48     | 137    | 204    | 219    | 128    | 8      | 766     | 0        | 766                      | 67.04 | 13.02 |    |  |
| No information available         | 33          | 147   | 716   | 1 777  | 4 968  | 6 847  | 6 584  | 3 392  | 371    | 24 835  | 1        | 24 836                   | 65.78 | 13.10 |    |  |
| Total                            | 97          | 567   | 2801  | 7 019  | 20 195 | 28 369 | 27 470 | 14 100 | 1492   | 102 110 | 2        | 102 112                  | 65.98 | 12.92 |    |  |

<sup>†</sup>Fracture prevalence: the rate of patients with a history of hip fracture per 10 000 dialysis patients.

**TABLE 42.** History of hip fracture and duration of dialysis (all dialysis patients)

| History of hip fracture          | Duration of dialysis (years) |        |        |        |        |       |       |         | Total | Mean | SD |
|----------------------------------|------------------------------|--------|--------|--------|--------|-------|-------|---------|-------|------|----|
|                                  | <2                           | 2-4    | 5-9    | 10-14  | 15-19  | 20-24 | ≥25   |         |       |      |    |
| <b>Without a history</b>         | 45 747                       | 50 271 | 48 547 | 23 732 | 12 101 | 7082  | 6655  | 194 135 | 6.80  | 6.95 |    |
| <b>With a history</b>            | 895                          | 1 099  | 1 044  | 459    | 242    | 159   | 328   | 4 226   | 7.83  | 8.34 |    |
| <b>Subtotal</b>                  | 46 642                       | 51 370 | 49 591 | 24 191 | 12 343 | 7241  | 6983  | 198 361 | 6.82  | 6.99 |    |
| Fracture prevalence <sup>†</sup> | 195.6                        | 218.6  | 215.0  | 193.4  | 200.0  | 224.5 | 492.9 | 217.7   |       |      |    |
| Unspecified                      | 562                          | 430    | 439    | 230    | 125    | 62    | 71    | 1 919   | 6.61  | 7.26 |    |
| No information available         | 14 934                       | 16 770 | 16 046 | 7849   | 4 004  | 2300  | 2173  | 64 076  | 6.79  | 6.95 |    |
| Total                            | 62 138                       | 68 570 | 66 076 | 32 270 | 16 472 | 9603  | 9227  | 264 356 | 6.81  | 6.98 |    |

<sup>†</sup>Fracture prevalence: the rate of patients with a history of hip fracture per 10 000 dialysis patients.

**TABLE 43.** History of hip fracture and presence or absence of diabetes mellitus (all dialysis patients)

| History of hip fracture          | Diabetic | Non-diabetic | Subtotal | No information available | Total   |
|----------------------------------|----------|--------------|----------|--------------------------|---------|
| <b>Male</b>                      |          |              |          |                          |         |
| Without a history                | 43 751   | 76 330       | 120 081  | 32                       | 120 113 |
| With a history                   | 704      | 1 013        | 1 717    | 0                        | 1 717   |
| Subtotal                         | 44 455   | 77 343       | 121 798  | 32                       | 121 830 |
| Fracture prevalence <sup>†</sup> | 160.9    | 132.7        | 143.0    | –                        | 142.9   |
| Unspecified                      | 499      | 654          | 1 153    | 0                        | 1 153   |
| No information available         | 14 116   | 25 085       | 39 201   | 39                       | 39 240  |
| Total                            | 59 070   | 103 082      | 162 152  | 71                       | 162 223 |
| <b>Female</b>                    |          |              |          |                          |         |
| Without a history                | 21 223   | 52 769       | 73 992   | 9                        | 74 001  |
| With a history                   | 859      | 1 649        | 2 508    | 1                        | 2 509   |
| Subtotal                         | 22 082   | 54 418       | 76 500   | 10                       | 76 510  |
| Fracture prevalence <sup>†</sup> | 404.7    | 312.5        | 339.0    | 1111.1                   | 339.0   |
| Unspecified                      | 231      | 535          | 766      | 0                        | 766     |
| No information available         | 6 863    | 17 949       | 24 812   | 24                       | 24 836  |
| Total                            | 29 176   | 72 902       | 102 078  | 34                       | 102 112 |

<sup>†</sup>Fracture prevalence: the rate of patients with a history of hip fracture per 10 000 dialysis patients.

first to ask patients about the history of hip fracture as a fracture-related question. The rate of patients with a history of hip fracture per 10 000 dialysis patients is described as the “fracture prevalence” (equal to 100-fold of the percentage of patients with a history of fracture with respect to the total number of dialysis patients). It is known that bone metabolism markedly differs between male and female patients and between diabetic and non-diabetic patients; therefore, fracture prevalences were summarized according to gender, and then according to the presence or absence of diabetes mellitus.

### 1. Tabulation according to gender

*a. Gender.* Table 41 shows the relationship between the history of hip fracture and age in male and female patients. The fracture prevalence in all the male patients was 142.9, whereas that in all the female patients was 339.0, which was more than twice that in all the male patients.

*b. Age.* The relationship between the fracture prevalence and age was examined using the data shown in Table 41. In both male and female patients the fracture prevalence increased with age. The fracture prevalence in female patients was higher than that in male patients in all age groups. In particular, the gender difference was marked in patients aged 70 years or older.

*c. Duration of dialysis.* The fracture prevalences are summarized according to the duration of dialysis in Table 42. The total fracture prevalences in all the

patients are shown by each duration because the durations of dialysis are not tabulated according to gender. The fracture prevalence sharply and discontinuously increased with dialysis durations exceeding 25 years.

*d. Presence or absence of diabetes mellitus.* Table 43 shows the relationship between the history of hip fracture and the presence or absence of diabetes mellitus. In both males and females, the fracture prevalence in diabetic patients was higher than that in non-diabetic patients.

*e. Body mass index (BMI).* Table 44 shows the relationship between a history of hip fracture and BMI. In both male and female patients, the lower the BMI, the higher the fracture prevalence. This suggests that malnourished patients are more prone to fracture.

*f. Pre-dialysis serum creatinine concentration.* Table 45 shows the relationship between the history of hip fracture and pre-dialysis serum creatinine concentration. In both male and female patients, the fracture prevalence increased with decreasing serum creatinine concentration. This also suggests that, similar to BMI, malnourished patients are more prone to fracture.

*g. Pre-dialysis serum albumin concentration prior to starting dialysis.* Table 46 shows the relationship between the history of hip fracture and pre-dialysis serum albumin concentration prior to starting



**TABLE 44.** History of hip fracture and body mass index (BMI) (all dialysis patients)

| History of hip fracture          | BMI (kg/m <sup>2</sup> ) |         |         |         |         |         |         |         |         |         |         |       |       | Subtotal | No information available | Total   | Mean   | SD      |       |      |
|----------------------------------|--------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-------|-------|----------|--------------------------|---------|--------|---------|-------|------|
|                                  | <12                      | 12-13   | 14-15   | 16-17   | 18-19   | 20-21   | 22-23   | 24-25   | 26-27   | 28-29   | 30-31   | 32-33 | 34-35 |          |                          |         |        |         | 36-37 | ≥38  |
| <b>Male</b>                      | 89                       | 253     | 2104    | 9 496   | 21 282  | 26 157  | 19 737  | 10 513  | 4 585   | 1 929   | 818     | 386   | 189   | 95       | 146                      | 97 779  | 22 334 | 120 113 | 21.50 | 3.69 |
| Without a history                | 2                        | 15      | 100     | 257     | 371     | 324     | 185     | 67      | 23      | 11      | 3       | 0     | 1     | 0        | 3                        | 1 362   | 355    | 1 717   | 19.99 | 5.43 |
| With a history                   | 91                       | 268     | 2 204   | 9 753   | 21 653  | 26 481  | 19 922  | 10 580  | 4 608   | 1 940   | 821     | 386   | 190   | 95       | 149                      | 99 141  | 22 689 | 121 830 | 21.48 | 3.73 |
| Subtotal                         | 224.7                    | 592.9   | 4 753.3 | 270.6   | 1 743.3 | 1 233.9 | 93.7    | 63.7    | 50.2    | 57.0    | 36.7    | 0.0   | 52.9  | 0.0      | 205.5                    | 139.3   | 142.9  |         |       |      |
| Fracture prevalence <sup>†</sup> | 0                        | 1       | 20      | 78      | 172     | 221     | 140     | 82      | 41      | 18      | 8       | 6     | 2     | 1        | 1                        | 791     | 362    | 1 153   | 21.55 | 3.42 |
| Unspecified                      | 4                        | 29      | 280     | 1 129   | 2 536   | 3 188   | 2 401   | 1 241   | 514     | 250     | 104     | 30    | 20    | 7        | 18                       | 11 751  | 27 489 | 39 240  | 21.51 | 4.09 |
| No information available         | 95                       | 298     | 2 504   | 10 960  | 24 361  | 29 890  | 22 463  | 11 903  | 5 163   | 2 208   | 933     | 422   | 212   | 103      | 168                      | 111 683 | 50 540 | 162 223 | 21.48 | 3.76 |
| <b>Female</b>                    | 80                       | 465     | 3 266   | 10 108  | 14 785  | 12 970  | 8 448   | 4 786   | 2 509   | 1 272   | 576     | 298   | 149   | 67       | 80                       | 59 859  | 14 142 | 74 001  | 20.69 | 4.05 |
| Without a history                | 7                        | 48      | 183     | 468     | 503     | 369     | 220     | 88      | 34      | 16      | 9       | 2     | 1     | 2        | 0                        | 1 950   | 559    | 2 509   | 19.34 | 3.25 |
| With a history                   | 87                       | 513     | 3 449   | 10 576  | 15 288  | 13 339  | 8 668   | 4 874   | 2 543   | 1 288   | 585     | 300   | 150   | 69       | 80                       | 61 809  | 14 701 | 76 510  | 20.65 | 4.03 |
| Subtotal                         | 875.0                    | 1 032.3 | 5 603.3 | 4 630.0 | 3 402.2 | 2 845.5 | 2 604.4 | 1 833.9 | 1 353.5 | 1 258.8 | 1 563.3 | 67.1  | 67.1  | 298.5    | 0.0                      | 325.8   | 395.3  | 339.0   |       |      |
| Fracture prevalence <sup>†</sup> | 0                        | 11      | 35      | 95      | 129     | 116     | 66      | 36      | 20      | 16      | 6       | 4     | 4     | 1        | 1                        | 540     | 226    | 766     | 20.56 | 4.09 |
| Unspecified                      | 9                        | 65      | 387     | 1 302   | 1 846   | 1 589   | 1 039   | 599     | 323     | 133     | 82      | 33    | 17    | 6        | 10                       | 7 440   | 17 596 | 24 836  | 20.70 | 4.80 |
| No information available         | 96                       | 589     | 3 871   | 11 973  | 17 263  | 15 044  | 9 773   | 5 509   | 2 886   | 1 437   | 673     | 337   | 171   | 76       | 91                       | 69 789  | 32 323 | 102 112 | 20.65 | 4.12 |
| <b>Total</b>                     |                          |         |         |         |         |         |         |         |         |         |         |       |       |          |                          |         |        |         |       |      |

<sup>†</sup>Fracture prevalence: the rate of patients with a history of hip fracture per 10 000 dialysis patients.

**TABLE 45.** History of hip fracture and pre-dialysis serum creatinine concentration (all dialysis patients)

| History of hip fracture          | Pre-dialysis serum creatinine concentration (mg/dL) |         |         |         |           |           |           |       |          |        | Subtotal | No information available | Total | Mean | SD |
|----------------------------------|---|---------|---------|---------|-----------|-----------|-----------|-------|----------|--------|----------|--------------------------|-------|------|----|
|                                  | <4.0  | 4.0-5.9 | 6.0-7.9 | 8.0-9.9 | 10.0-11.9 | 12.0-13.9 | 14.0-15.9 | ≥16.0 |          |        |          |                          |       |      |    |
| <b>Male</b>                      | 1 551   | 5 012   | 12 714  | 23 031  | 29 940    | 26 066    | 14 459    | 6 050 | 1 18 823 | 1 290  | 120 113  | 11.03                    | 3.13  |      |    |
| Without a history                | 37  | 158     | 343     | 476     | 437       | 180       | 50        | 12    | 1 693    | 24     | 1 717    | 9.21                     | 2.67  |      |    |
| With a history                   | 1 588   | 5 170   | 13 057  | 23 507  | 30 377    | 26 246    | 14 509    | 6 062 | 120 516  | 1 314  | 121 830  | 11.01                    | 3.13  |      |    |
| Subtotal                         | 238.6   | 315.2   | 269.8   | 206.7   | 146.0     | 69.1      | 34.6      | 19.8  | 142.5    | 186.0  | 142.9    |                          |       |      |    |
| Fracture prevalence <sup>†</sup> | 22  | 61      | 134     | 264     | 292       | 201       | 94        | 35    | 1 103    | 50     | 1 153    | 10.41                    | 3.05  |      |    |
| Unspecified                      | 274   | 845     | 2 046   | 4 013   | 5 243     | 4 454     | 2 477     | 1 117 | 20 469   | 18 771 | 39 240   | 11.09                    | 3.14  |      |    |
| No information available         | 1 884   | 6 076   | 15 237  | 27 784  | 35 912    | 30 901    | 17 080    | 7 214 | 142 088  | 20 135 | 162 223  | 11.02                    | 3.13  |      |    |
| <b>Female</b>                    | 1 717   | 5 341   | 13 593  | 22 780  | 19 939    | 8 100     | 1 450     | 271   | 73 191   | 810    | 74 001   | 9.29                     | 2.56  |      |    |
| Without a history                | 117   | 407     | 870     | 738     | 267       | 59        | 7         | 2     | 2 467    | 42     | 2 509    | 7.62                     | 2.25  |      |    |
| With a history                   | 1 834   | 5 748   | 14 463  | 23 518  | 20 206    | 8 159     | 1 457     | 273   | 75 658   | 852    | 76 510   | 9.24                     | 2.57  |      |    |
| Subtotal                         | 681.4   | 762.0   | 640.0   | 324.0   | 133.9     | 72.8      | 48.3      | 73.8  | 337.1    | 518.5  | 339.0    |                          |       |      |    |
| Fracture prevalence <sup>†</sup> | 30  | 75      | 175     | 228     | 184       | 51        | 7         | 0     | 750      | 16     | 766      | 8.63                     | 2.43  |      |    |
| Unspecified                      | 289   | 941     | 2 372   | 3 994   | 3 656     | 1 483     | 235       | 49    | 13 019   | 11 817 | 24 836   | 9.34                     | 2.57  |      |    |
| No information available         | 2 153   | 6 764   | 17 010  | 27 740  | 24 046    | 9 693     | 1 699     | 322   | 89 427   | 12 685 | 102 112  | 9.24                     | 2.57  |      |    |
| <b>Total</b>                     |   |         |         |         |           |           |           |       |          |        |          |                          |       |      |    |

<sup>†</sup>Fracture prevalence: the rate of patients with a history of hip fracture per 10 000 dialysis patients.

**TABLE 46.** History of hip fracture and pre-dialysis serum albumin (all dialysis patients)

| History of hip fracture          | Pre-dialysis serum albumin concentration (g/dL) |         |         |         |       | Subtotal | No information available | Total   | Mean | SD   |
|----------------------------------|---|---------|---------|---------|-------|----------|--------------------------|---------|------|------|
|                                  | <3.0  | 3.0–3.4 | 3.5–3.9 | 4.0–4.4 | ≥4.5  |          |                          |         |      |      |
| <b>Male</b>                      |   |         |         |         |       |          |                          |         |      |      |
| Without a history                | 5182  | 18 332  | 54 480  | 32 273  | 3226  | 113 493  | 6 620                    | 120 113 | 3.74 | 0.44 |
| With a history                   | 199   | 410     | 731     | 258     | 21    | 1 619    | 98                       | 1 717   | 3.52 | 0.49 |
| Subtotal                         | 5381  | 18 742  | 55 211  | 32 531  | 3247  | 115 112  | 6 718                    | 121 830 | 3.74 | 0.44 |
| Fracture prevalence <sup>†</sup> | 384.0   | 223.7   | 134.2   | 79.9    | 65.1  | 142.7    | 148.0                    | 142.9   |      |      |
| Unspecified                      | 59  | 201     | 593     | 222     | 9     | 1 084    | 69                       | 1 153   | 3.66 | 0.42 |
| No information available         | 894   | 3 089   | 9 229   | 5 481   | 597   | 19 290   | 19 950                   | 39 240  | 3.74 | 0.44 |
| Total                            | 6334  | 22 032  | 65 033  | 38 234  | 3853  | 135 486  | 26 737                   | 162 223 | 3.74 | 0.44 |
| <b>Female</b>                    |   |         |         |         |       |          |                          |         |      |      |
| Without a history                | 3419  | 12 636  | 35 564  | 17 286  | 1189  | 70 094   | 3 907                    | 74 001  | 3.70 | 0.42 |
| With a history                   | 284   | 741     | 1 020   | 270     | 17    | 2 332    | 177                      | 2 509   | 3.47 | 0.47 |
| Subtotal                         | 3703  | 13 377  | 36 584  | 17 556  | 1206  | 72 426   | 4 084                    | 76 510  | 3.69 | 0.43 |
| Fracture prevalence <sup>†</sup> | 830.7   | 586.4   | 286.8   | 156.2   | 143.0 | 332.7    | 453.0                    | 339.0   |      |      |
| Unspecified                      | 64  | 166     | 385     | 116     | 4     | 735      | 31                       | 766     | 3.57 | 0.46 |
| No information available         | 595   | 2 248   | 6 233   | 2 933   | 239   | 12 248   | 12 588                   | 24 836  | 3.70 | 0.43 |
| Total                            | 4362  | 15 791  | 43 202  | 20 605  | 1449  | 85 409   | 16 703                   | 102 112 | 3.69 | 0.43 |

<sup>†</sup>Fracture prevalence: the rate of patients with a history of hip fracture per 10 000 dialysis patients.

dialysis. In both male and female patients the fracture prevalence increased with decreasing serum albumin concentration. This also suggests that, similar to BMI and serum creatinine concentration, malnourished patients are more prone to fracture.

*h. Percutaneous ethanol injection therapy (PEIT).* Table 47 shows the relationship between the history of hip fracture and the use of PEIT for secondary hyperparathyroidism. In both males and females, the fracture prevalence in patients who had been treated with PEIT was clearly higher than that in patients who had not been treated.

*i. Parathyroidectomy (PTx).* Table 48 shows the relationship between the history of hip fracture and treatment of secondary hyperparathyroidism with PTx. Similarly to the results for PEIT, the fracture prevalence was higher in patients who had been treated with PTx than in those who had not been treated.

*j. Serum intact parathyroid hormone (iPTH) concentration.* Table 49 shows the relationship between the history of hip fracture and serum iPTH concentration. The fracture prevalences in male patients with serum iPTH concentrations of 140–800 pg/mL were

**TABLE 47.** History of hip fracture and treatment with percutaneous ethanol injection therapy (PEIT) (all dialysis patients)

| History of hip fracture          | PEIT treatment |       | Subtotal | Unspecified | No information available | Total   |
|----------------------------------|----------------|-------|----------|-------------|--------------------------|---------|
|                                  | No             | Yes   |          |             |                          |         |
| <b>Male</b>                      |                |       |          |             |                          |         |
| Without a history                | 116 336        | 956   | 117 292  | 1441        | 1 380                    | 120 113 |
| With a history                   | 1 534          | 74    | 1 608    | 39          | 70                       | 1 717   |
| Subtotal                         | 117 870        | 1030  | 118 900  | 1480        | 1 450                    | 121 830 |
| Fracture prevalence <sup>†</sup> | 131.9          | 774.1 | 137.1    | 270.6       | 507.2                    | 142.9   |
| Unspecified                      | 159            | 8     | 167      | 980         | 6                        | 1 153   |
| No information available         | 955            | 62    | 1 017    | 2           | 38 221                   | 39 240  |
| Total                            | 118 984        | 1100  | 120 084  | 2462        | 39 677                   | 162 223 |
| <b>Female</b>                    |                |       |          |             |                          |         |
| Without a history                | 71 424         | 781   | 72 205   | 924         | 872                      | 74 001  |
| With a history                   | 2 270          | 74    | 2 344    | 59          | 106                      | 2 509   |
| Subtotal                         | 73 694         | 855   | 74 549   | 983         | 978                      | 76 510  |
| Fracture prevalence <sup>†</sup> | 317.8          | 947.5 | 324.6    | 638.5       | 1 215.6                  | 339.0   |
| Unspecified                      | 143            | 1     | 144      | 619         | 3                        | 766     |
| No information available         | 598            | 50    | 648      | 0           | 24 188                   | 24 836  |
| Total                            | 74 435         | 906   | 75 341   | 1602        | 25 169                   | 102 112 |

<sup>†</sup>Fracture prevalence: the rate of patients with a history of hip fracture per 10 000 dialysis patients.

**TABLE 48.** History of hip fracture and treatment with parathyroidectomy (PTx) (all dialysis patients)

| History of hip fracture          | PTx performed |       | Subtotal | Unspecified | No information available | Total   |
|----------------------------------|---------------|-------|----------|-------------|--------------------------|---------|
|                                  | No            | Yes   |          |             |                          |         |
| <b>Male</b>                      |               |       |          |             |                          |         |
| Without a history                | 112 956       | 5115  | 118 071  | 951         | 1 091                    | 120 113 |
| With a history                   | 1 474         | 154   | 1 628    | 28          | 61                       | 1 717   |
| Subtotal                         | 114 430       | 5269  | 119 699  | 979         | 1 152                    | 121 830 |
| Fracture prevalence <sup>†</sup> | 130.5         | 301.1 | 137.9    | 294.4       | 559.1                    | 142.9   |
| Unspecified                      | 263           | 10    | 273      | 874         | 6                        | 1 153   |
| No information available         | 1 425         | 288   | 1 713    | 3           | 37 524                   | 39 240  |
| Total                            | 116 118       | 5567  | 121 685  | 1856        | 38 682                   | 162 223 |
| <b>Female</b>                    |               |       |          |             |                          |         |
| Without a history                | 68 115        | 4626  | 72 741   | 591         | 669                      | 74 001  |
| With a history                   | 2 188         | 177   | 2 365    | 44          | 100                      | 2 509   |
| Subtotal                         | 70 303        | 4803  | 75 106   | 635         | 769                      | 76 510  |
| Fracture prevalence <sup>†</sup> | 321.2         | 382.6 | 325.1    | 744.5       | 1 494.8                  | 339.0   |
| Unspecified                      | 166           | 12    | 178      | 585         | 3                        | 766     |
| No information available         | 835           | 284   | 1 119    | 0           | 23 717                   | 24 836  |
| Total                            | 71 304        | 5099  | 76 403   | 1220        | 24 489                   | 102 112 |

<sup>†</sup>Fracture prevalence: the rate of patients with a history of hip fracture per 10 000 dialysis patients.

relatively lower than those in the other male patients, and the fracture prevalences in female patients with serum iPTH concentrations of 60–600 pg/mL were relatively lower than those in the other female patients. Outside these serum iPTH concentration ranges the fracture prevalence tended to be high in both male and female patients.

#### (1) Tabulation considering BMI

As described above, the history of fracture is strongly related to BMI; therefore, the relationship between the history of hip fracture and serum iPTH concentration was examined by taking the classification according to BMI into consideration, which is shown in the three-dimensional graphs in Figure 3. Here, the graphs were prepared on the basis of the data collected as of June 2008 (2). In patients with a low BMI, a U-shaped relationship was observed between the serum iPTH concentration and the fracture prevalence, with both excessively high and low serum iPTH concentrations related to a high fracture prevalence. This tendency weakened with increasing BMI, showing little relationship between serum iPTH concentration and the fracture prevalence in patients with a high BMI.

#### (2) Tabulation considering serum albumin concentration

Similarly, the relationship between the history of hip fracture and serum iPTH concentration was examined by taking the classification according to serum albumin concentration into consideration, which is shown in three-dimensional graphs in Figure 4. These graphs were also prepared on the basis of the

data collected as of June 2008 (2). Similarly to the case of BMI, a U-shaped relationship was observed between serum iPTH concentration and the fracture prevalence in patients with low serum albumin concentrations. A weak relationship was observed between serum iPTH concentration and the fracture prevalence in patients with high serum albumin concentrations.

*k. Pre-dialysis serum calcium concentration.* Table 50 shows the relationship between the history of hip fracture and pre-dialysis serum calcium concentration. The serum calcium concentrations shown in this table were corrected using serum albumin concentrations using the equation shown below (when the serum albumin concentration is <4.0 g/dL):

$$\begin{aligned} \text{Corrected serum Ca concentration (mg/dL)} = \\ \text{Serum Ca concentration (mg/dL)} + \\ (4.0 - \text{Serum albumin concentration (g/dL)}) \end{aligned}$$

In male patients, it is clear that the fracture prevalence decreased with decreasing serum calcium concentration, and increased with increasing serum calcium concentration. A similar tendency was observed in female patients; however, the fracture prevalence was also high in female patients with serum calcium concentrations <7.0 mg/dL, which is different from the male patients.

#### 2. Pre-dialysis serum phosphorus

Table 51 shows the relationship between the history of hip fracture and pre-dialysis serum phosphorus concentration. In both males and females, the fracture prevalence increased with decreasing

**TABLE 49.** History of hip fracture and serum intact parathyroid hormone (iPTH) concentration (all dialysis patients)

| History of hip fracture          | Serum iPTH concentration (pg/mL) |       |       |       |       |         |         |         |         |         |         | Subtotal | No information available | Total | Mean  | SD      |         |         |         |        |  |
|----------------------------------|----------------------------------|-------|-------|-------|-------|---------|---------|---------|---------|---------|---------|----------|--------------------------|-------|-------|---------|---------|---------|---------|--------|--|
|                                  | <20                              | 20-39 | 40-59 | 60-79 | 80-99 | 100-119 | 120-139 | 140-159 | 160-179 | 180-199 | 200-359 |          |                          |       |       |         | 360-599 | 600-799 | 800-999 | ≥1000  |  |
|                                  |                                  |       |       |       |       |         |         |         |         |         |         |          |                          |       |       |         |         |         |         |        |  |
| <b>Male</b>                      |                                  |       |       |       |       |         |         |         |         |         |         |          |                          |       |       |         |         |         |         |        |  |
| Without a history                | 5629                             | 7992  | 7398  | 7334  | 7162  | 6867    | 6782    | 6154    | 5457    | 5053    | 22 079  | 8413     | 2043                     | 859   | 887   | 100 109 | 20 004  | 120 113 | 192.49  | 201.44 |  |
| With a history                   | 100                              | 111   | 112   | 107   | 106   | 114     | 107     | 81      | 66      | 69      | 274     | 111      | 24                       | 13    | 19    | 1 414   | 303     | 1 717   | 195.48  | 279.09 |  |
| Subtotal                         | 5729                             | 8103  | 7510  | 7441  | 7268  | 6981    | 6889    | 6235    | 5523    | 5122    | 22 353  | 8524     | 2067                     | 872   | 906   | 101 523 | 20 307  | 121 830 | 192.53  | 202.73 |  |
| Fracture prevalence <sup>†</sup> | 177.7                            | 138.9 | 151.4 | 145.9 | 148.0 | 166.0   | 157.8   | 131.6   | 120.9   | 136.6   | 124.1   | 131.9    | 117.5                    | 151.3 | 214.2 | 141.2   | 151.5   | 142.9   |         |        |  |
| Unspecified                      | 62                               | 119   | 104   | 66    | 76    | 50      | 54      | 51      | 55      | 34      | 172     | 57       | 14                       | 4     | 1     | 919     | 234     | 1 153   | 154.81  | 157.84 |  |
| No information available         | 838                              | 1181  | 1026  | 1070  | 1076  | 1012    | 903     | 964     | 827     | 817     | 3 569   | 1390     | 330                      | 159   | 158   | 15 320  | 23 920  | 39 240  | 201.98  | 211.90 |  |
| <b>Total</b>                     | 6629                             | 9403  | 8640  | 8577  | 8420  | 8043    | 7846    | 7250    | 6405    | 5973    | 26 094  | 9971     | 2411                     | 1035  | 1065  | 117 762 | 44 461  | 162 223 | 193.46  | 203.69 |  |
| <b>Female</b>                    |                                  |       |       |       |       |         |         |         |         |         |         |          |                          |       |       |         |         |         |         |        |  |
| Without a history                | 3636                             | 5315  | 4787  | 4518  | 4403  | 4055    | 3746    | 3663    | 3117    | 2912    | 13 231  | 5631     | 1419                     | 715   | 704   | 61 852  | 12 149  | 74 001  | 199.98  | 220.11 |  |
| With a history                   | 130                              | 224   | 185   | 138   | 147   | 141     | 127     | 104     | 104     | 89      | 398     | 140      | 54                       | 18    | 42    | 2 041   | 468     | 2 509   | 201.97  | 282.04 |  |
| Subtotal                         | 3766                             | 5539  | 4972  | 4656  | 4550  | 4196    | 3873    | 3767    | 3221    | 3001    | 13 629  | 5771     | 1473                     | 733   | 746   | 63 893  | 12 617  | 76 510  | 200.04  | 222.35 |  |
| Fracture prevalence <sup>†</sup> | 357.5                            | 421.4 | 386.5 | 305.4 | 333.9 | 347.7   | 339.0   | 283.9   | 333.7   | 305.6   | 300.8   | 248.6    | 380.5                    | 251.7 | 596.6 | 330.0   | 385.2   | 339.0   |         |        |  |
| Unspecified                      | 42                               | 78    | 52    | 46    | 38    | 44      | 46      | 42      | 23      | 22      | 117     | 36       | 11                       | 6     | 2     | 605     | 161     | 766     | 166.06  | 173.71 |  |
| No information available         | 555                              | 838   | 747   | 686   | 650   | 633     | 585     | 518     | 512     | 463     | 2 137   | 983      | 243                      | 135   | 155   | 9840    | 14 996  | 24 836  | 213.24  | 245.10 |  |
| <b>Total</b>                     | 4363                             | 6455  | 5771  | 5388  | 5238  | 4873    | 4504    | 4327    | 3756    | 3486    | 15 883  | 6790     | 1727                     | 874   | 903   | 74 338  | 27 774  | 102 112 | 201.51  | 225.21 |  |

<sup>†</sup>Fracture prevalence: the rate of patients with a history of hip fracture per 10 000 dialysis patients.

serum phosphorus concentrations, and decreased with increasing serum phosphorus concentrations.

### 3. Tabulation according to the presence or absence of diabetes mellitus

The following results are based on the data collected as of June 2008 (2).

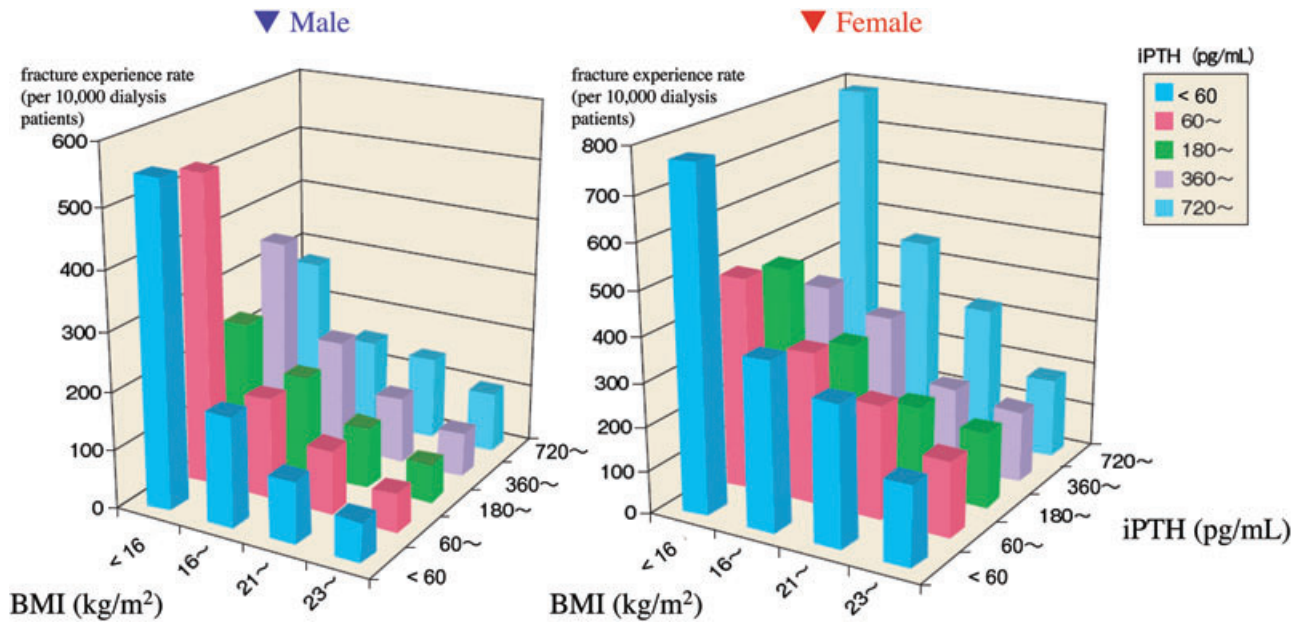
*a. Serum iPTH concentration and BMI.* Figure 5 shows three-dimensional graphs obtained by summarizing the relationship between the fracture prevalence, serum iPTH concentration, and BMI separately in diabetic and non-diabetic patients. Note that the scale of the fracture prevalence in the graph for diabetic patients is much greater than that for non-diabetic patients because the rate in the former is higher than that in the latter generally.

In the diabetic patients with a low BMI, there was a clear relationship between serum iPTH concentration and fracture prevalence; specifically, the fracture prevalence in patients with high serum iPTH concentration was very high. Moreover, the fracture prevalence tended to be rather high in patients with low serum iPTH concentrations; however, the relationship between serum iPTH concentration and the fracture prevalence weakened as BMI increased.

For the non-diabetic patients with a low BMI there was some relationship between the serum iPTH concentration and the fracture prevalence. Unlike in diabetic patients, however, the fracture prevalence in the non-diabetic patients with low serum iPTH concentrations tended to be rather high, and the increase in the fracture prevalence in patients with high serum iPTH concentrations was not so marked; however, the relationship between the serum iPTH concentration and the fracture prevalence weakened as BMI increased, similarly to the case of diabetic patients.

*b. Serum iPTH and serum albumin concentrations.* Figure 6 shows three-dimensional graphs obtained by summarizing the relationship between the fracture prevalence, serum iPTH concentration, and serum albumin concentration separately in diabetic and non-diabetic patients. Note that the scale of fracture prevalence in the graph for diabetic patients is much greater than that for non-diabetic patients.

The tendency in serum albumin concentration was similar to that in BMI. That is, for diabetic patients with a low serum albumin concentration, a U-shaped relationship was found between serum iPTH concentration and the fracture prevalence, where the fracture prevalence was high for both the high and low

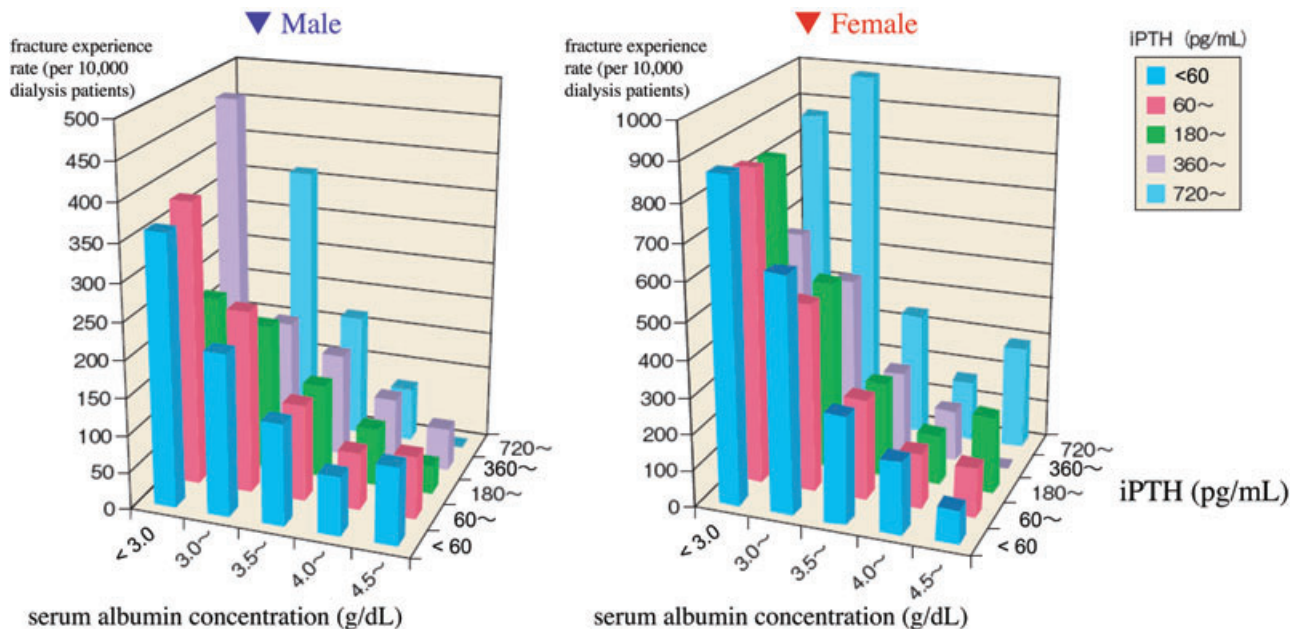


**FIG. 3.** Relationship between the history of hip fracture, serum intact parathyroid hormone concentration (iPTH), and body mass index (BMI) (all dialysis patients).

serum iPTH concentrations. The increase in the fracture prevalence in the high serum iPTH concentration region was significant.

For non-diabetic patients with low serum albumin concentrations there was also a clear relationship between serum iPTH concentration and the fracture prevalence; however, a marked increase in the

fracture prevalence was observed in non-diabetic patients with low serum iPTH concentrations, unlike in diabetic patients. For both diabetic and non-diabetic patients, the relationship between serum iPTH concentration and the fracture prevalence was weak in the region of high serum albumin concentration.



**FIG. 4.** Relationship between the history of hip fracture, serum intact parathyroid hormone concentration (iPTH), and serum albumin concentration (all dialysis patients).

**TABLE 50.** History of hip fracture and corrected pre-dialysis serum calcium concentration<sup>†</sup> (all dialysis patients)

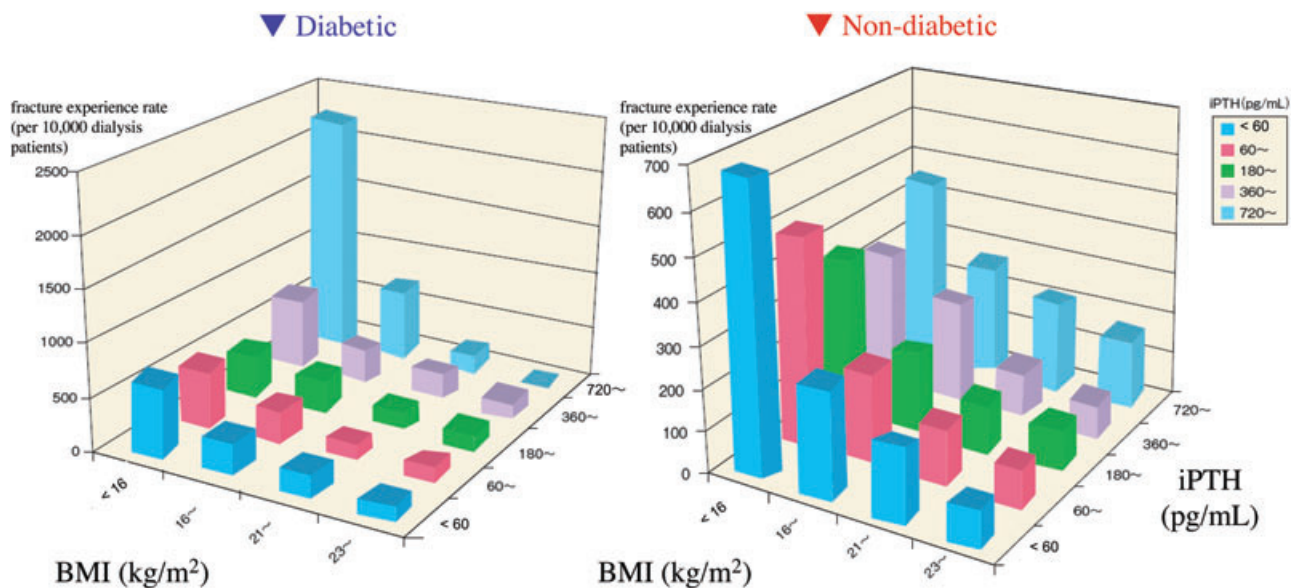
| History of hip fracture          | Corrected pre-dialysis serum calcium concentration <sup>†</sup> (mg/dL) |         |         |         |         |         |         |         |         |           |           | Subtotal | No information available | Total | Mean    | SD     |           |           |       |
|----------------------------------|---|---------|---------|---------|---------|---------|---------|---------|---------|-----------|-----------|----------|--------------------------|-------|---------|--------|-----------|-----------|-------|
|                                  | <6.0  | 6.0-6.4 | 6.5-6.9 | 7.0-7.4 | 7.5-7.9 | 8.0-8.4 | 8.5-8.9 | 9.0-9.4 | 9.5-9.9 | 10.0-10.4 | 10.5-10.9 |          |                          |       |         |        | 11.0-11.4 | 11.5-11.9 | ≥12.0 |
| <b>Male</b>                      | 114   | 147     | 308     | 958     | 3414    | 12 307  | 26 081  | 28 119  | 20 295  | 12 279    | 5747      | 2081     | 774                      | 566   | 113 190 | 6 923  | 120 113   | 9.25      | 0.89  |
| Without a history                | 1   | 2       | 3       | 4       | 51      | 144     | 388     | 390     | 307     | 160       | 93        | 36       | 16                       | 15    | 1 610   | 107    | 1 717     | 9.31      | 0.94  |
| With a history                   | 115   | 149     | 311     | 962     | 3465    | 12 451  | 26 469  | 28 509  | 20 602  | 12 439    | 5840      | 2117     | 790                      | 581   | 114 800 | 7 030  | 121 830   | 9.25      | 0.89  |
| Subtotal                         | 87.7  | 136.1   | 97.4    | 41.8    | 149.4   | 117.0   | 148.8   | 138.7   | 151.3   | 130.3     | 161.8     | 173.0    | 206.7                    | 265.0 | 142.2   | 154.6  | 142.9     |           |       |
| Fracture prevalence <sup>‡</sup> | 0   | 1       | 2       | 7       | 20      | 118     | 264     | 255     | 201     | 128       | 61        | 10       | 5                        | 8     | 1 080   | 73     | 1 153     | 9.29      | 0.87  |
| Unspecified                      | 27  | 33      | 59      | 172     | 625     | 2 106   | 4 082   | 4 557   | 3 253   | 2 052     | 1 008     | 370      | 125                      | 164   | 18 633  | 20 607 | 39 240    | 9.28      | 1.03  |
| No information available         | 142   | 183     | 372     | 1141    | 4110    | 14 675  | 30 815  | 33 321  | 24 056  | 14 619    | 6909      | 2497     | 920                      | 753   | 134 513 | 27 710 | 162 223   | 9.25      | 0.91  |
| <b>Female</b>                    | 62  | 74      | 137     | 423     | 1381    | 4 902   | 12 785  | 17 872  | 15 152  | 9 492     | 4724      | 1762     | 666                      | 469   | 69 901  | 4 100  | 74 001    | 9.44      | 0.91  |
| Without a history                | 3   | 2       | 6       | 12      | 36      | 170     | 466     | 576     | 466     | 272       | 183       | 69       | 33                       | 29    | 2 323   | 186    | 2 509     | 9.46      | 0.98  |
| With a history                   | 65  | 76      | 143     | 435     | 1417    | 5 072   | 13 251  | 18 448  | 15 618  | 9 764     | 4907      | 1831     | 699                      | 498   | 72 224  | 4 286  | 76 510    | 9.44      | 0.91  |
| Subtotal                         | 483.9   | 270.3   | 438.0   | 283.7   | 260.7   | 346.8   | 364.5   | 322.3   | 307.6   | 286.6     | 387.4     | 391.6    | 495.5                    | 618.3 | 332.3   | 453.7  | 339.0     |           |       |
| Fracture prevalence <sup>‡</sup> | 0   | 1       | 1       | 2       | 9       | 45      | 133     | 189     | 163     | 109       | 44        | 26       | 6                        | 7     | 735     | 31     | 766       | 9.49      | 0.91  |
| Unspecified                      | 10  | 16      | 30      | 63      | 221     | 839     | 2 206   | 3 020   | 2 461   | 1 612     | 877       | 297      | 117                      | 115   | 11 884  | 12 952 | 24 836    | 9.46      | 1.02  |
| No information available         | 75  | 93      | 174     | 500     | 1647    | 5 956   | 15 590  | 21 657  | 18 242  | 11 485    | 5828      | 2154     | 822                      | 620   | 84 843  | 17 269 | 102 112   | 9.44      | 0.93  |
| <b>Total</b>                     |   |         |         |         |         |         |         |         |         |           |           |          |                          |       |         |        |           |           |       |

<sup>†</sup>When the serum albumin concentration is <4.0 g/dL: Corrected serum calcium concentration (mg/dL) = Serum calcium concentration (mg/dL) + (4.0 - Serum albumin concentration (g/dL)). <sup>‡</sup>Fracture prevalence: the rate of patients with a history of hip fracture per 10 000 dialysis patients.

**TABLE 51.** History of hip fracture and pre-dialysis serum phosphorus concentration (all dialysis patients)

| History of hip fracture          | Pre-dialysis serum phosphorus concentration (mg/dL) |         |         |         |         |         |         |         |        |         |      | Subtotal | No information available | Total | Mean | SD |
|----------------------------------|---|---------|---------|---------|---------|---------|---------|---------|--------|---------|------|----------|--------------------------|-------|------|----|
|                                  | <3.0  | 3.0-3.9 | 4.0-4.9 | 5.0-5.9 | 6.0-6.9 | 7.0-7.9 | 8.0-8.9 | ≥9.0    |        |         |      |          |                          |       |      |    |
| <b>Male</b>                      | 5198  | 15 487  | 30 054  | 32 411  | 20 541  | 8 988   | 2187    | 118 561 | 1 552  | 120 113 | 5.30 | 1.51     |                          |       |      |    |
| Without a history                | 140   | 299     | 466     | 416     | 233     | 85      | 18      | 1 689   | 28     | 1 717   | 4.90 | 1.50     |                          |       |      |    |
| With a history                   | 5338  | 15 786  | 30 520  | 32 827  | 20 774  | 9 073   | 2205    | 120 250 | 1 580  | 121 830 | 5.29 | 1.51     |                          |       |      |    |
| Subtotal                         | 269.3   | 193.1   | 155.1   | 128.4   | 113.4   | 94.6    | 82.3    | 142.5   | 180.4  | 142.9   |      |          |                          |       |      |    |
| Fracture prevalence <sup>‡</sup> | 46  | 147     | 293     | 310     | 179     | 66      | 14      | 1 087   | 66     | 1 153   | 5.20 | 1.43     |                          |       |      |    |
| Unspecified                      | 923   | 2 535   | 4 971   | 5 430   | 3 510   | 1 537   | 358     | 19 838  | 19 402 | 39 240  | 5.29 | 1.51     |                          |       |      |    |
| No information available         | 6307  | 18 468  | 35 784  | 38 567  | 24 463  | 10 676  | 2577    | 141 175 | 21 048 | 162 223 | 5.29 | 1.51     |                          |       |      |    |
| <b>Female</b>                    | 3398  | 9 463   | 19 515  | 20 557  | 12 336  | 4 981   | 1019    | 73 067  | 934    | 74 001  | 5.22 | 1.46     |                          |       |      |    |
| Without a history                | 215   | 449     | 713     | 603     | 289     | 115     | 19      | 2 452   | 57     | 2 509   | 4.80 | 1.46     |                          |       |      |    |
| With a history                   | 3613  | 9 912   | 20 228  | 21 160  | 12 625  | 5 096   | 1038    | 75 519  | 991    | 76 510  | 5.20 | 1.46     |                          |       |      |    |
| Subtotal                         | 632.7   | 474.5   | 365.4   | 293.3   | 234.3   | 230.9   | 186.5   | 335.6   | 610.3  | 339.0   |      |          |                          |       |      |    |
| Fracture prevalence <sup>‡</sup> | 41  | 123     | 219     | 184     | 110     | 42      | 8       | 745     | 21     | 766     | 5.03 | 1.47     |                          |       |      |    |
| Unspecified                      | 663   | 1 661   | 3 176   | 3 523   | 2 288   | 860     | 172     | 12 628  | 12 208 | 24 836  | 5.21 | 1.46     |                          |       |      |    |
| No information available         | 4317  | 11 696  | 23 623  | 24 867  | 15 023  | 5 998   | 1218    | 88 892  | 13 220 | 102 112 | 5.20 | 1.46     |                          |       |      |    |
| <b>Total</b>                     |   |         |         |         |         |         |         |         |        |         |      |          |                          |       |      |    |

<sup>‡</sup>Fracture prevalence: the rate of patients with a history of hip fracture per 10 000 dialysis patients.



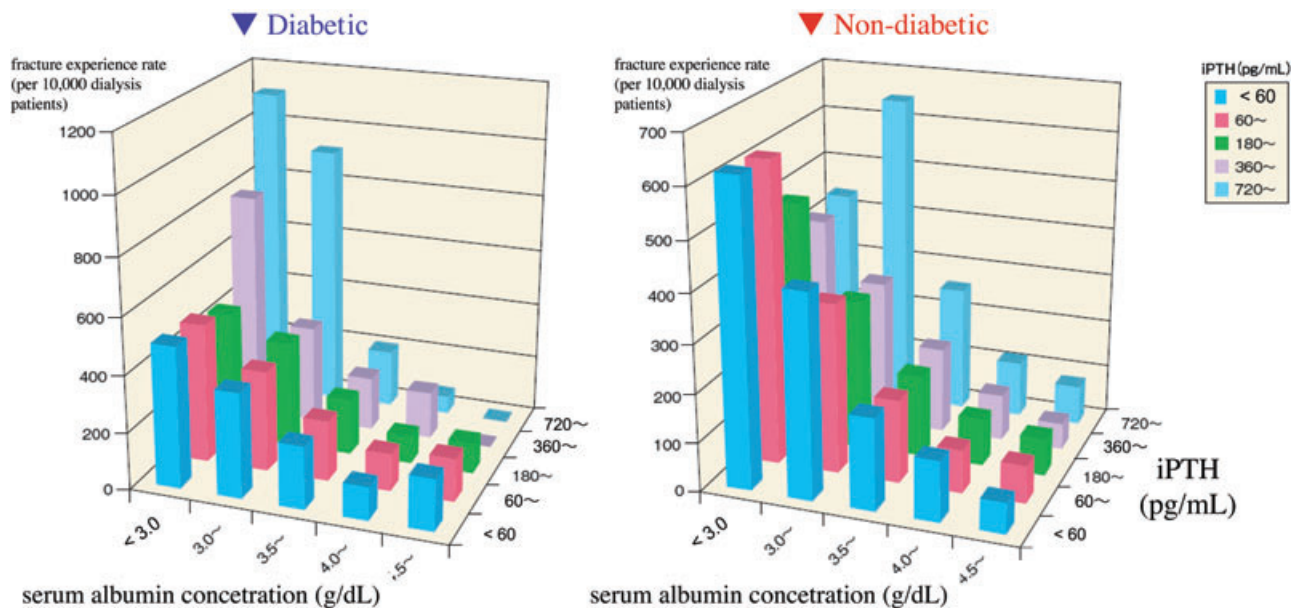
**FIG. 5.** Relationship between the history of hip fracture, serum intact parathyroid hormone concentration (iPTH), and body mass index (BMI) (all dialysis patients categorized into diabetic and non-diabetic groups). Note: the scale of fracture prevalence in the graph for diabetic patients is greater than that for non-diabetic patients.

*c. Serum calcium and phosphorus concentrations.* Figure 7 shows three-dimensional graphs obtained by summarizing the relationship between the serum calcium and phosphorus concentrations, and the fracture prevalence separately for diabetic and non-diabetic patients. No matter whether the patients are diabetic or non-diabetic, the fracture prevalence increased with decreasing serum phosphorus concen-

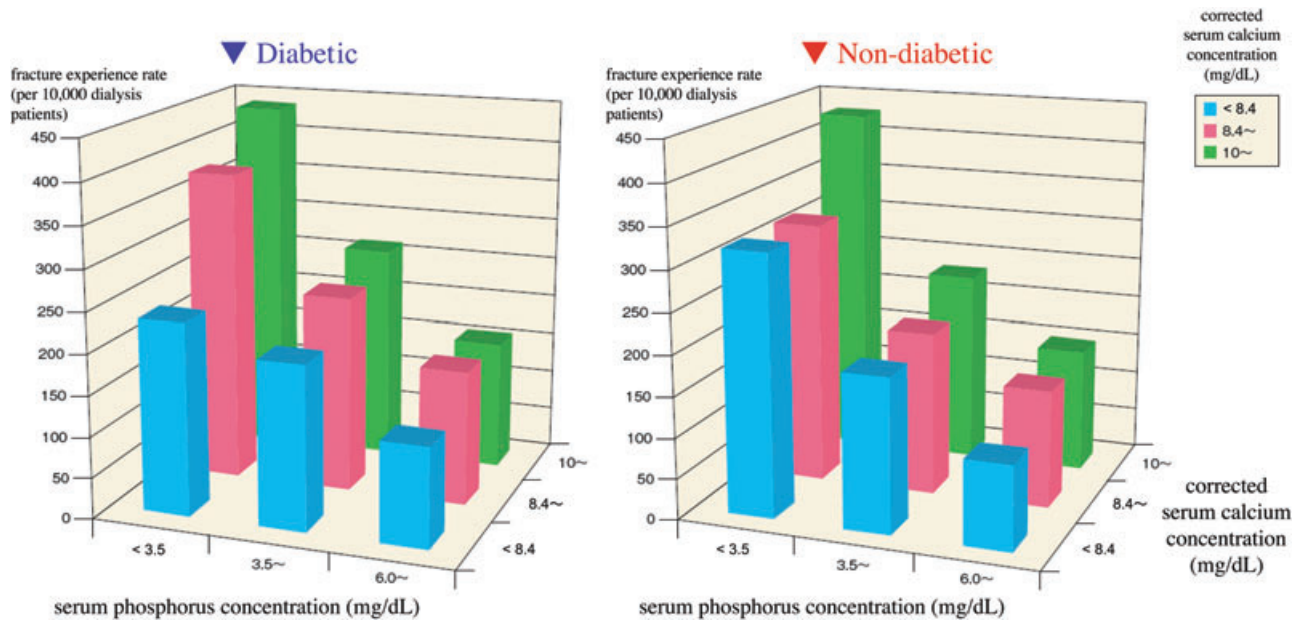
tration and with increasing corrected serum calcium concentration prior to the dialysis session.

*E. Clinical condition of patients at the start of dialysis*

In the survey conducted at the end of 2007, the clinical condition of the patients when dialysis was



**FIG. 6.** Relationship between the history of hip fracture, serum intact parathyroid hormone concentration (iPTH), and serum albumin concentration (all dialysis patients categorized into diabetic and non-diabetic groups). Note: the scale of fracture prevalence in the graph for diabetic patients is greater than that for non-diabetic patients.



**FIG. 7.** Relationship between the history of hip fracture, corrected serum calcium concentration, and serum phosphorus concentration prior to the introduction to dialysis (all dialysis patients). Note 1: fracture prevalence for diabetic patients is greater than that for non-diabetic patients. Note 2: when the serum albumin concentration is <4.0 g/dL, the following equation is used: Corrected serum calcium concentration (mg/dL) = Serum calcium concentration (mg/dL) + (4.0 - Serum albumin concentration [g/dL]).

fist carried out was examined following the previous survey. The subjects of the survey on the clinical condition should be the patients who were newly begun on dialysis in 2007 and responded to the questionnaire using floppy disks concerning their clinical condition. The number of patients who satisfied these criteria was 30 510 (male, 19 748; female, 10 762). The survey results regarding renal function were analyzed for the 17 765 patients whose data were available at the start of dialysis.

The following are the summaries of the treatment methods for end-stage renal failure, the renal function of the patients when beginning dialysis, as well as major symptoms experienced at the start of dialysis.

### 1. Treatment methods at the end of the first year of dialysis

Table 52 shows a summary of treatment methods for renal failure examined at the end of 2007 for all subject patients. The following are the treatment methods examined at the end of 2007 for the patients who began dialysis in 2007, of whom 92.0% underwent hemodialysis. The percentages of patients who underwent hemodiafiltration (2.5%) and peritoneal dialysis (5.4%) were slightly higher than those in the previous year (the results of the 2006 survey were: facility hemodialysis, 92.4%; hemodiafiltration, 2.2%; hemofiltration, 0.2%; hemoabsorption, 0.0%; home

hemodialysis, 0.0%; continuous ambulatory peritoneal dialysis (CAPD), 5.0%; and intermittent peritoneal dialysis (IPD), 0.2% (1)).

### 2. Clinical symptoms and signs of patients at the introduction of dialysis

Table 53 shows a summary of the various clinical symptoms and signs and disorders experienced by the patients with respect to the items related to the clinical symptoms included in the criteria for the introduction of dialysis in patients with chronic renal failure (CRF) (12), which was provided by a renal failure research group of the Ministry of Health, Labor and Welfare, and those related to the calculation of Carlsson's scores (13). Regarding the symptoms related to the criteria for the introduction of dialysis in CRF patients, digestive symptoms, retention of body fluid, and fluid abnormalities were observed in approximately one-half of the patients. Following these symptoms, blood abnormalities and cardiovascular symptoms were observed in approximately 40% of the patients; moreover, impaired eyesight was observed in 22.9%, and nervous disorder symptoms in 13.8% of the patients. The percentages of these symptoms were almost the same as those in the 2006 survey. Regarding the items related to Carlsson's score, diabetes mellitus, congestive cardiac failure, and brain infarction were observed as major contributing factors.



**TABLE 52.** Pre-dialysis serum creatinine concentrations of the first dialysis and treatment methods used at the end of 2007 (only patients begun on dialysis in 2007 who responded to the questionnaire using floppy disks)

| Method of dialysis        | Pre-dialysis serum creatinine concentration of the first dialysis (mg/dL) |           |           |            |             |             |             |             |             |            |           |           |           |           |           |           |           | Subtotal | % <sup>†</sup> | No information available | Total          | % <sup>†</sup> | Mean   | SD     |           |           |       |
|---------------------------|---|-----------|-----------|------------|-------------|-------------|-------------|-------------|-------------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|----------------|--------------------------|----------------|----------------|--------|--------|-----------|-----------|-------|
|                           | <2.0  | 2.0-2.9   | 3.0-3.9   | 4.0-4.9    | 5.0-5.9     | 6.0-6.9     | 7.0-7.9     | 8.0-8.9     | 9.0-9.9     | 10.0-10.9  | 11.0-11.9 | 12.0-12.9 | 13.0-13.9 | 14.0-14.9 | 15.0-15.9 | 16.0-16.9 | 17.0-17.9 |          |                |                          |                |                |        |        | 18.0-18.9 | 19.0-19.9 | ≥20.0 |
| Facility hemodialysis (%) | 91 (0.6)  | 308 (1.9) | 623 (3.8) | 1116 (6.9) | 1625 (10.0) | 1971 (12.1) | 2310 (14.2) | 2510 (15.4) | 1837 (11.3) | 1251 (7.7) | 827 (5.1) | 553 (3.4) | 367 (2.3) | 221 (1.4) | 176 (1.1) | 112 (0.7) | 82 (0.5)  | 66 (0.4) | 45 (0.3)       | 170 (1.0)                | 16 261 (100.0) | 91.5           | 11 798 | 28 059 | 92.0      | 8.32      | 3.55  |
| Hemodiafiltration (%)     | 7 (1.2)   | 13 (2.3)  | 19 (3.3)  | 46 (8.0)   | 64 (11.2)   | 72 (12.6)   | 82 (14.3)   | 96 (16.8)   | 53 (9.2)    | 38 (6.6)   | 24 (4.2)  | 18 (3.1)  | 6 (1.0)   | 9 (1.6)   | 4 (0.7)   | 3 (0.5)   | 4 (0.7)   | 6 (1.0)  | 0              | 9 (1.6)                  | 573 (100.0)    | 3.2            | 193    | 766    | 2.5       | 8.16      | 3.85  |
| Hemofiltration (%)        | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 2 (0.0)    | 2 (0.0)     | 2 (0.0)     | 1 (0.0)     | 1 (0.0)     | 1 (0.0)     | 0 (0.0)    | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)  | 0 (0.0)        | 0 (0.0)                  | 10 (100.0)     | 0.1            | 12     | 22     | 0.1       | 6.99      | 2.32  |
| Hemoadsorption (%)        | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)    | 0 (0.0)     | 0 (0.0)     | 0 (0.0)     | 0 (0.0)     | 0 (0.0)     | 0 (0.0)    | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)  | 0 (0.0)        | 0 (0.0)                  | 0 (100.0)      | 0.0            | 3      | 3      | 0.0       | -         | -     |
| Home hemodialysis (%)     | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)    | 0 (0.0)     | 0 (0.0)     | 0 (0.0)     | 0 (0.0)     | 0 (0.0)     | 0 (0.0)    | 1 (50.0)  | 0 (0.0)   | 1 (50.0)  | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)  | 0 (0.0)        | 0 (0.0)                  | 2 (100.0)      | 0.0            | 1      | 3      | 0.0       | 12.35     | 1.63  |
| Peritoneal dialysis (%)   | 6 (0.7)   | 10 (1.1)  | 22 (2.4)  | 41 (4.5)   | 61 (6.6)    | 121 (13.2)  | 118 (12.8)  | 185 (20.1)  | 99 (10.8)   | 80 (8.7)   | 60 (6.5)  | 34 (3.7)  | 24 (2.6)  | 19 (2.1)  | 9 (1.0)   | 10 (1.1)  | 3 (0.3)   | 1 (0.1)  | 2 (0.2)        | 14 (1.5)                 | 919 (100.0)    | 5.2            | 738    | 1 657  | 5.4       | 8.77      | 3.34  |
| Total (%)                 | 104 (0.6)   | 331 (1.9) | 664 (3.7) | 1205 (6.8) | 1752 (9.9)  | 2166 (12.2) | 2511 (14.1) | 2792 (15.7) | 1990 (11.2) | 1369 (7.7) | 912 (5.1) | 606 (3.4) | 398 (2.2) | 249 (1.4) | 189 (1.1) | 125 (0.7) | 89 (0.5)  | 73 (0.4) | 47 (0.3)       | 193 (1.1)                | 17 765 (100.0) | 100.0          | 12 745 | 30 510 | 100.0     | 8.34      | 3.55  |

<sup>†</sup>Percentage of the left cell value relative to the total number of its column. Values in parentheses below each figure represent the percentage relative to the total of each row.

3. Pre-dialysis serum creatinine concentration of the first dialysis

The pre-dialysis serum creatinine concentration of the first dialysis (hereafter, serum creatinine concentrations at the introduction of dialysis) are summarized below.

a. Treatment method at the end of the first year of dialysis. The relationship between the treatment method at the end of the first year of dialysis and the serum creatinine concentration at that time is already shown in Table 52. No clear difference in the trend of serum creatinine concentration at the start of dialysis was observed between the treatment methods.

b. Gender. Table 54 shows the relationship between the serum creatinine concentration at the introduction to dialysis and gender. The mean serum creatinine concentrations in male and female patients at the introduction to dialysis were 8.69 and 7.69 mg/dL, respectively; the level was higher in male patients than in female patients. Both levels were nearly the same as those in the 2006 survey.

c. Age. Table 55 shows the relationship between the serum creatinine concentration at the introduction to dialysis and age. The serum creatinine concentration at the introduction to dialysis in patients aged less than 15 years was low, and that in patients aged 15 years or older tended to decrease with age.

d. Primary disease. Table 56 shows the relationship between the serum creatinine concentration at the introduction to dialysis and primary disease. The serum creatinine concentration at the introduction to dialysis in patients with diabetic nephropathy as the primary disease was lower than that in patients with chronic glomerulonephritis.

4. Estimated glomerular filtration rate of patients at the introduction to dialysis. The estimated glomerular filtration rate (eGFR) (mL/min/1.73 m<sup>2</sup>) of patients was calculated and tabulated in terms of gender, age, and serum creatinine concentration of the patients at the introduction to dialysis. The eGFR was obtained by multiplying the value obtained using the modification of diet in renal disease (MDRD) equation by the Japanese factor (14).

When the serum creatinine concentration was measured by the Jaffe method, the following equation was used:

**TABLE 53.** Items related to clinical symptoms at the introduction of dialysis (only patients begun on dialysis in 2007 who responded to the questionnaire using floppy disks)

| Clinical symptoms and signs or disorder at the introduction of dialysis  | Symptom free | Experiencing symptoms | Subtotal | Unspecified | No information available | Total  |
|--|--------------|-----------------------|----------|-------------|--------------------------|--------|
| Retention of body fluid: generalized edema, severe hypoproteinemia, pneumonodema                               | 7 421        | 7541                  | 14 962   | 502         | 15 046                   | 30 510 |
| (%)  | (49.6)       | (50.4)                | (100.0)  |             |                          |        |
| Fluid abnormality: uncontrollable electrolyte and acid-base imbalance  | 7 572        | 7210                  | 14 782   | 611         | 15 117                   | 30 510 |
| (%)  | (51.2)       | (48.8)                | (100.0)  |             |                          |        |
| Digestive system: nausea, vomiting, loss of appetite, diarrhea   | 7 169        | 7549                  | 14 718   | 658         | 15 134                   | 30 510 |
| (%)  | (48.7)       | (51.3)                | (100.0)  |             |                          |        |
| Cardiovascular system: serious hypertension, cardiac failure, pericarditis                                     | 9 101        | 5611                  | 14 712   | 539         | 15 259                   | 30 510 |
| (%)  | (61.9)       | (38.1)                | (100.0)  |             |                          |        |
| Nervous system: central and peripheral nervous disorder, mental disorder                                       | 12 696       | 2035                  | 14 731   | 647         | 15 132                   | 30 510 |
| (%)  | (86.2)       | (13.8)                | (100.0)  |             |                          |        |
| Blood abnormalities: severe anemia, bleeding tendency  | 8 594        | 6245                  | 14 839   | 498         | 15 173                   | 30 510 |
| (%)  | (57.9)       | (42.1)                | (100.0)  |             |                          |        |
| Impaired eyesight: uremic retinopathy, diabetic retinopathy  | 11 243       | 3343                  | 14 586   | 825         | 15 099                   | 30 510 |
| (%)  | (77.1)       | (22.9)                | (100.0)  |             |                          |        |
| History of cardiac infarction before the start of dialysis   | 14 620       | 1558                  | 16 178   | 371         | 13 961                   | 30 510 |
| (%)  | (90.4)       | (9.6)                 | (100.0)  |             |                          |        |
| Congestive cardiac failure   | 11 625       | 4465                  | 16 090   | 364         | 14 056                   | 30 510 |
| (%)  | (72.2)       | (27.8)                | (100.0)  |             |                          |        |
| History of quadruple amputation, complication of arteriosclerosis obliterans, or aortic aneurysm $\geq 6$ cm   | 15 295       | 1055                  | 16 350   | 261         | 13 899                   | 30 510 |
| (%)  | (93.5)       | (6.5)                 | (100.0)  |             |                          |        |
| History of brain infarction or transient ischaemic attack  | 13 711       | 2458                  | 16 169   | 398         | 13 943                   | 30 510 |
| (%)  | (84.8)       | (15.2)                | (100.0)  |             |                          |        |
| Dementia   | 14 871       | 1412                  | 16 283   | 225         | 14 002                   | 30 510 |
| (%)  | (91.3)       | (8.7)                 | (100.0)  |             |                          |        |
| Chronic lung disease   | 15 557       | 592                   | 16 149   | 253         | 14 108                   | 30 510 |
| (%)  | (96.3)       | (3.7)                 | (100.0)  |             |                          |        |
| Collagen diseases  | 15 786       | 410                   | 16 196   | 227         | 14 087                   | 30 510 |
| (%)  | (97.5)       | (2.5)                 | (100.0)  |             |                          |        |
| Peptic ulcer   | 14 539       | 876                   | 15 415   | 739         | 14 356                   | 30 510 |
| (%)  | (94.3)       | (5.7)                 | (100.0)  |             |                          |        |
| Chronic hepatic disease (without portal hypertension) or chronic hepatitis                                     | 15 145       | 970                   | 16 115   | 233         | 14 162                   | 30 510 |
| (%)  | (94.0)       | (6.0)                 | (100.0)  |             |                          |        |
| Diabetes mellitus (without end-stage organ damage, patients treated by dietary therapy alone are not included) | 11 605       | 4302                  | 15 907   | 257         | 14 346                   | 30 510 |
| (%)  | (73.0)       | (27.0)                | (100.0)  |             |                          |        |
| Hemiplegia   | 15 231       | 952                   | 16 183   | 182         | 14 145                   | 30 510 |
| (%)  | (94.1)       | (5.9)                 | (100.0)  |             |                          |        |
| Diabetes mellitus: severe retinopathy, nervous disorder, renal disorder, labile diabetes                       | 10 452       | 5530                  | 15 982   | 249         | 14 279                   | 30 510 |
| (%)  | (65.4)       | (34.6)                | (100.0)  |             |                          |        |
| Malignant tumors (those without metastasis and who have survived five years since diagnosis are not included)  | 15 188       | 994                   | 16 182   | 234         | 14 094                   | 30 510 |
| (%)  | (93.9)       | (6.1)                 | (100.0)  |             |                          |        |
| Leukemia (acute and chronic)   | 16 146       | 109                   | 16 255   | 175         | 14 080                   | 30 510 |
| (%)  | (99.3)       | (0.7)                 | (100.0)  |             |                          |        |
| Lymphoma   | 16 065       | 113                   | 16 178   | 233         | 14 099                   | 30 510 |
| (%)  | (99.3)       | (0.7)                 | (100.0)  |             |                          |        |
| Moderate and end-stage hepatic disease   | 15 782       | 430                   | 16 212   | 188         | 14 110                   | 30 510 |
| (%)  | (97.3)       | (2.7)                 | (100.0)  |             |                          |        |
| Metastasizing malignant tumors   | 15 897       | 257                   | 16 154   | 232         | 14 124                   | 30 510 |
| (%)  | (98.4)       | (1.6)                 | (100.0)  |             |                          |        |
| Acquired immunodeficiency syndrome   | 13 544       | 75                    | 13 619   | 2724        | 14 167                   | 30 510 |
| (%)  | (99.4)       | (0.6)                 | (100.0)  |             |                          |        |

**TABLE 54.** Pre-dialysis serum creatinine concentration at the introduction to dialysis and gender (only patients begun on dialysis in 2007 who responded to the questionnaire using floppy disks)

| Gender                   | Pre-dialysis serum creatinine concentration at the introduction to dialysis (mg/dL) |           |           |            |            |             |             |             |             |            |           |           |           |           |           |           |           | Total    | Mean     | SD        |                |           |        |          |                          |
|--------------------------|---|-----------|-----------|------------|------------|-------------|-------------|-------------|-------------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|----------|-----------|----------------|-----------|--------|----------|--------------------------|
|                          | <2.0  | 2.0-2.9   | 3.0-3.9   | 4.0-4.9    | 5.0-5.9    | 6.0-6.9     | 7.0-7.9     | 8.0-8.9     | 9.0-9.9     | 10.0-10.9  | 11.0-11.9 | 12.0-12.9 | 13.0-13.9 | 14.0-14.9 | 15.0-15.9 | 16.0-16.9 | 17.0-17.9 |          |          |           | 18.0-18.9      | 19.0-19.9 | ≥20.0  | Subtotal | No information available |
| Male                     | 49 (0.4)  | 149 (1.3) | 334 (2.9) | 633 (5.5)  | 1017 (8.9) | 1290 (11.3) | 1643 (14.4) | 1850 (16.2) | 1366 (11.9) | 961 (8.4)  | 673 (5.9) | 446 (3.9) | 296 (2.6) | 186 (1.6) | 144 (1.3) | 91 (0.8)  | 67 (0.6)  | 61 (0.5) | 40 (0.3) | 149 (1.3) | 11 445 (100.0) | 8 303     | 19 748 | 8.69     | 3.61                     |
| Female                   | 55 (0.9)  | 182 (2.9) | 330 (5.2) | 572 (9.1)  | 735 (11.6) | 876 (13.9)  | 868 (13.7)  | 942 (14.9)  | 624 (9.9)   | 408 (6.5)  | 239 (3.8) | 160 (2.5) | 102 (1.6) | 63 (1.0)  | 45 (0.7)  | 34 (0.5)  | 22 (0.3)  | 12 (0.2) | 7 (0.1)  | 44 (0.7)  | 6 320 (100.0)  | 4 442     | 10 762 | 7.69     | 3.35                     |
| Subtotal                 | 104 (0.6)   | 331 (1.9) | 664 (3.7) | 1205 (6.8) | 1752 (9.9) | 2166 (12.2) | 2511 (14.1) | 2792 (15.7) | 1990 (11.2) | 1369 (7.7) | 912 (5.1) | 606 (3.4) | 398 (2.2) | 249 (1.4) | 189 (1.1) | 125 (0.7) | 89 (0.5)  | 73 (0.4) | 47 (0.3) | 193 (1.1) | 17 765 (100.0) | 12 745    | 30 510 | 8.34     | 3.55                     |
| No information available | 0   | 0         | 0         | 0          | 0          | 0           | 0           | 0           | 0           | 0          | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0        | 0        | 0         | 0              | 0         | 0      | 0        | 0                        |
| Total                    | 104 (0.6)   | 331 (1.9) | 664 (3.7) | 1205 (6.8) | 1752 (9.9) | 2166 (12.2) | 2511 (14.1) | 2792 (15.7) | 1990 (11.2) | 1369 (7.7) | 912 (5.1) | 606 (3.4) | 398 (2.2) | 249 (1.4) | 189 (1.1) | 125 (0.7) | 89 (0.5)  | 73 (0.4) | 47 (0.3) | 193 (1.1) | 17 765 (100.0) | 12 745    | 30 510 | 8.34     | 3.55                     |

Values in parentheses below each figure represent the percentage relative to the total of each row.

**TABLE 55.** Pre-dialysis serum creatinine concentration at the introduction to dialysis and age (only patients begun on dialysis in 2007 who responded to the questionnaire using floppy disks)

| Age (years)              | Pre-dialysis serum creatinine concentrations at the introduction to dialysis (mg/dL) |           |            |             |             |             |             |             |             |             |            |            |           |           |           |           |           | Total    | Mean     | SD             |                |           |        |          |                          |
|--------------------------|--|-----------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------------|------------|-----------|-----------|-----------|-----------|-----------|----------|----------|----------------|----------------|-----------|--------|----------|--------------------------|
|                          | <2.0   | 2.0-2.9   | 3.0-3.9    | 4.0-4.9     | 5.0-5.9     | 6.0-6.9     | 7.0-7.9     | 8.0-8.9     | 9.0-9.9     | 10.0-10.9   | 11.0-11.9  | 12.0-12.9  | 13.0-13.9 | 14.0-14.9 | 15.0-15.9 | 16.0-16.9 | 17.0-17.9 |          |          |                | 18.0-18.9      | 19.0-19.9 | ≥20.0  | Subtotal | No information available |
| <15 (%)                  | 0 (0.0)  | 1 (9.1)   | 1 (9.1)    | 2 (18.2)    | 1 (9.1)     | 1 (9.1)     | 4 (36.4)    | 0 (0.0)     | 1 (9.1)     | 0 (0.0)     | 0 (0.0)    | 0 (0.0)    | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)  | 0 (0.0)  | 11 (100.0)     | 17             | 28        | 5.83   | 1.93     |                          |
| 15-29 (%)                | 0 (0.0)  | 2 (2.0)   | 2 (2.0)    | 4 (4.0)     | 3 (3.0)     | 3 (3.0)     | 15 (15.0)   | 8 (8.0)     | 17 (17.0)   | 11 (11.0)   | 11 (11.0)  | 9 (9.0)    | 5 (5.0)   | 3 (3.0)   | 3 (3.0)   | 6 (6.0)   | 3 (3.0)   | 8 (8.0)  | 3 (3.0)  | 134 (100.0)    | 117            | 251       | 12.81  | 5.55     |                          |
| 30-44 (%)                | 1 (0.1)  | 8 (0.9)   | 12 (1.3)   | 26 (2.9)    | 41 (4.6)    | 59 (6.6)    | 71 (7.9)    | 118 (13.1)  | 87 (9.7)    | 85 (9.4)    | 57 (6.3)   | 47 (5.2)   | 26 (2.9)  | 29 (3.2)  | 19 (2.1)  | 20 (2.2)  | 18 (2.0)  | 14 (1.5) | 18 (2.0) | 900 (100.0)    | 706            | 1 606     | 10.96  | 4.91     |                          |
| 45-59 (%)                | 9 (0.3)  | 39 (1.1)  | 77 (2.2)   | 143 (4.0)   | 214 (6.1)   | 320 (9.0)   | 414 (11.7)  | 591 (16.7)  | 468 (13.2)  | 246 (7.0)   | 186 (5.3)  | 124 (3.5)  | 78 (2.2)  | 65 (1.8)  | 52 (1.5)  | 28 (0.8)  | 19 (0.5)  | 13 (0.4) | 13 (0.4) | 3 536 (100.0)  | 2 421          | 5 957     | 9.44   | 3.88     |                          |
| 60-74 (%)                | 43 (0.6)   | 102 (1.4) | 246 (3.4)  | 426 (5.9)   | 687 (9.4)   | 898 (12.3)  | 1081 (14.9) | 1203 (16.5) | 902 (12.4)  | 586 (8.1)   | 387 (5.3)  | 164 (2.3)  | 106 (1.5) | 65 (0.9)  | 37 (0.5)  | 22 (0.3)  | 11 (0.2)  | 11 (0.2) | 42 (0.6) | 7 274 (100.0)  | 5 193          | 12 467    | 8.29   | 3.13     |                          |
| 75-89 (%)                | 46 (0.8)   | 163 (2.9) | 306 (5.4)  | 573 (10.1)  | 767 (13.5)  | 848 (14.9)  | 914 (16.1)  | 837 (14.7)  | 480 (8.5)   | 297 (5.2)   | 179 (3.2)  | 53 (0.9)   | 34 (0.6)  | 22 (0.4)  | 14 (0.2)  | 7 (0.1)   | 6 (0.1)   | 2 (0.0)  | 2 (0.0)  | 5 675 (100.0)  | 4 087          | 9 762     | 7.27   | 3.01     |                          |
| ≥90 (%)                  | 5 (2.1)  | 15 (6.4)  | 20 (8.6)   | 30 (12.9)   | 39 (15.5)   | 36 (14.9)   | 24 (10.3)   | 17 (7.3)    | 10 (4.3)    | 4 (1.7)     | 4 (1.7)    | 1 (0.4)    | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)  | 0 (0.0)  | 233 (100.0)    | 188            | 421       | 6.33   | 2.48     |                          |
| Subtotal                 | 104 (0.6)  | 330 (6.4) | 664 (12.0) | 1204 (21.6) | 1752 (31.2) | 2166 (39.2) | 2511 (44.1) | 2792 (49.1) | 1990 (35.2) | 1369 (24.1) | 912 (16.1) | 606 (10.7) | 398 (7.0) | 249 (4.4) | 189 (3.3) | 125 (2.2) | 89 (1.6)  | 73 (1.3) | 47 (0.8) | 17 765 (100.0) | 12 729         | 30 492    | 8.34   | 3.55     |                          |
| No information available | 0  | 1         | 0          | 1           | 0           | 0           | 0           | 0           | 0           | 0           | 0          | 0          | 0         | 0         | 0         | 0         | 0         | 0        | 0        | 2 (100.0)      | 16             | 18        | 3.35   | 1.77     |                          |
| Total                    | 104 (0.6)  | 331 (1.9) | 664 (3.7)  | 1205 (6.8)  | 1752 (9.9)  | 2166 (12.2) | 2511 (14.1) | 2792 (15.7) | 1990 (11.2) | 1369 (7.7)  | 912 (5.1)  | 606 (3.4)  | 398 (2.2) | 249 (1.4) | 189 (1.1) | 125 (0.7) | 89 (0.5)  | 73 (0.4) | 47 (0.3) | 193 (1.1)      | 17 765 (100.0) | 12 745    | 30 510 | 8.34     | 3.55                     |
| Mean                     | 73.23  | 72.85     | 72.28      | 72.31       | 71.58       | 70.34       | 69.29       | 67.18       | 65.60       | 63.99       | 62.75      | 61.85      | 60.22     | 60.19     | 56.90     | 52.55     | 49.02     | 52.56    | 52.56    | 67.37          | 67.29          | 67.33     | 67.33  | 67.33    |                          |
| SD                       | 10.62  | 13.44     | 11.65      | 12.00       | 11.54       | 11.64       | 11.62       | 12.27       | 12.47       | 12.88       | 13.30      | 13.27      | 13.61     | 13.34     | 14.55     | 15.06     | 17.20     | 13.93    | 15.40    | 13.08          | 13.41          | 13.41     | 13.41  | 13.22    |                          |

Values in parentheses below each figure represent the percentage relative to the total of each row.

**TABLE 56. Pre-dialysis serum creatinine concentration at the introduction to dialysis and primary diseases (only patients begun on dialysis in 2007 who responded to the questionnaire using floppy disks)**

| Primary disease   | Pre-dialysis serum creatinine concentrations at the introduction to dialysis (mg/dL) |           |             |             |             |              |              |              |              |             |             |             |           |           |           |           |           |           |           | Subtotal   | No information | Total  | Mean   | SD    |       |
|---|--|-----------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|-------------|-------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|----------------|--------|--------|-------|-------|
|   | <2.0   | 2.0-2.9   | 3.0-3.9     | 4.0-4.9     | 5.0-5.9     | 6.0-6.9      | 7.0-7.9      | 8.0-8.9      | 9.0-9.9      | 10.0-10.9   | 11.0-11.9   | 12.0-12.9   | 13.0-13.9 | 14.0-14.9 | 15.0-15.9 | 16.0-16.9 | 17.0-17.9 | 18.0-18.9 | 19.0-19.9 |            |                |        |        |       | ≥20.0 |
| Chronic glomerulonephritis (%)                          | 19 (0.5)   | 58 (1.4)  | 99 (2.4)    | 203 (5.0)   | 339 (8.4)   | 426 (10.5)   | 535 (13.2)   | 661 (16.4)   | 482 (11.9)   | 352 (8.7)   | 242 (6.0)   | 169 (4.2)   | 113 (2.8) | 80 (2.0)  | 72 (1.8)  | 38 (0.9)  | 30 (0.7)  | 30 (0.7)  | 19 (0.5)  | 75 (1.9)   | 4042 (100.0)   | 2 958  | 7 000  | 9.03  | 4.04  |
| Chronic pyelonephritis (%)                              | 1 (0.8)  | 7 (3.0)   | 4 (1.3)     | 4 (1.3)     | 15 (3.0)    | 12 (9.0)     | 16 (12.0)    | 19 (14.3)    | 15 (11.3)    | 18 (13.5)   | 18 (6.0)    | 5 (3.8)     | 6 (4.5)   | 2 (1.5)   | 4 (3.0)   | 4 (3.0)   | 0 (0.8)   | 0 (0.8)   | 0 (0.8)   | 1 (0.8)    | 133 (100.0)    | 81     | 214    | 9.12  | 3.80  |
| Rapidly progressive glomerulonephritis (%)              | 1 (0.3)  | 7 (2.4)   | 9 (3.1)     | 23 (7.8)    | 30 (10.2)   | 39 (13.2)    | 34 (11.5)    | 34 (11.5)    | 33 (11.2)    | 22 (7.5)    | 18 (6.1)    | 15 (5.1)    | 12 (4.1)  | 6 (2.0)   | 3 (1.0)   | 3 (1.0)   | 1 (0.3)   | 1 (0.3)   | 1 (0.3)   | 3 (1.0)    | 295 (100.0)    | 216    | 511    | 8.50  | 3.52  |
| Nephropathy of pregnancy / pregnancy toxemia (%)        | 0 (0.0)  | 0 (0.0)   | 0 (0.0)     | 3 (7.1)     | 2 (7.1)     | 3 (10.7)     | 6 (21.4)     | 4 (14.3)     | 3 (10.7)     | 3 (10.7)    | 1 (3.6)     | 1 (3.6)     | 0 (0.0)   | 1 (3.6)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 1 (3.6)    | 28 (100.0)     | 11     | 39     | 9.04  | 5.36  |
| Other nephritides that cannot be classified (%)         | 0 (0.0)  | 1 (1.2)   | 5 (6.2)     | 1 (1.2)     | 6 (7.4)     | 9 (9.9)      | 8 (9.9)      | 13 (16.0)    | 9 (11.1)     | 9 (11.1)    | 3 (3.7)     | 5 (6.2)     | 5 (6.2)   | 1 (1.2)   | 3 (3.7)   | 0 (0.0)   | 1 (1.2)   | 2 (2.5)   | 0 (0.0)   | 1 (1.2)    | 81 (100.0)     | 50     | 131    | 9.31  | 3.65  |
| Polycystic kidney disease (%)                           | 1 (0.2)  | 30 (0.0)  | 73 (0.5)    | 142 (2.5)   | 212 (5.5)   | 277 (7.3)    | 302 (11.4)   | 344 (16.9)   | 227 (11.6)   | 165 (9.3)   | 105 (7.3)   | 56 (4.1)    | 43 (3.0)  | 27 (2.1)  | 15 (1.6)  | 13 (0.9)  | 12 (0.9)  | 8 (0.5)   | 2 (0.5)   | 12 (2.1)   | 2072 (100.0)   | 1 308  | 3 380  | 8.16  | 3.06  |
| Nephrosclerosis (%)                                     | 0 (0.3)  | 1 (1.4)   | 3 (3.5)     | 6 (6.9)     | 10 (10.2)   | 14 (13.4)    | 11 (10.6)    | 16 (16.6)    | 11 (11.0)    | 10 (8.0)    | 5 (4.1)     | 4 (2.7)     | 7 (2.1)   | 1 (1.3)   | 0 (0.7)   | 0 (0.6)   | 0 (0.4)   | 0 (0.1)   | 1 (0.6)   | 3 (0.6)    | 103 (100.0)    | 85     | 188    | 9.91  | 4.17  |
| Malignant hypertension (%)                              | 0 (0.0)  | 1 (0.0)   | 1 (1.0)     | 1 (1.0)     | 8 (7.8)     | 14 (13.6)    | 11 (10.7)    | 16 (15.5)    | 11 (10.7)    | 10 (9.7)    | 6 (5.8)     | 4 (3.9)     | 7 (6.8)   | 1 (1.0)   | 1 (0.9)   | 1 (0.9)   | 1 (1.0)   | 1 (1.0)   | 1 (1.0)   | 3 (2.9)    | 103 (100.0)    | 5 438  | 13 371 | 7.94  | 3.20  |
| Diabetic nephropathy (%)                                | 49 (0.6)   | 157 (2.0) | 343 (4.3)   | 595 (7.5)   | 867 (10.9)  | 1047 (13.2)  | 1187 (15.0)  | 1235 (15.6)  | 896 (11.3)   | 362 (6.9)   | 234 (4.6)   | 224 (2.9)   | 139 (1.8) | 81 (1.0)  | 56 (0.7)  | 36 (0.5)  | 21 (0.3)  | 18 (0.2)  | 11 (0.1)  | 48 (0.6)   | 7933 (100.0)   | 5 438  | 13 371 | 7.94  | 3.20  |
| Systemic lupus erythematosus nephritis (%)              | 1 (0.7)  | 5 (3.6)   | 11 (8.0)    | 24 (17.4)   | 11 (8.0)    | 13 (9.4)     | 21 (15.2)    | 19 (13.8)    | 12 (8.7)     | 8 (5.8)     | 3 (2.2)     | 5 (3.6)     | 1 (0.7)   | 1 (0.7)   | 0 (0.0)   | 0 (0.0)   | 1 (0.7)   | 0 (0.0)   | 1 (0.7)   | 1 (0.7)    | 138 (100.0)    | 87     | 225    | 7.24  | 3.43  |
| Amyloid kidney (%)                                      | 1 (1.1)  | 4 (4.6)   | 4 (4.6)     | 10 (11.5)   | 16 (18.4)   | 16 (18.4)    | 12 (13.8)    | 14 (16.1)    | 6 (6.9)      | 4 (4.6)     | 4 (4.6)     | 2 (2.3)     | 2 (2.3)   | 1 (1.1)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)    | 87 (100.0)     | 70     | 157    | 6.97  | 2.60  |
| Gouty kidney (%)  | 0 (0.0)  | 1 (1.6)   | 4 (6.3)     | 1 (1.6)     | 7 (11.1)    | 7 (11.1)     | 7 (11.1)     | 13 (20.6)    | 11 (17.5)    | 2 (3.2)     | 2 (4.8)     | 2 (3.2)     | 2 (3.2)   | 3 (4.8)   | 3 (4.8)   | 1 (1.6)   | 2 (3.2)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)    | 63 (100.0)     | 22     | 85     | 9.32  | 3.49  |
| Renal failure due to congenital abnormal metabolism (%) | 0 (0.0)  | 1 (4.0)   | 1 (4.0)     | 1 (4.0)     | 0 (0.0)     | 0 (0.0)      | 5 (16.0)     | 2 (6.0)      | 0 (0.0)      | 0 (0.0)     | 0 (0.0)     | 0 (0.0)     | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 25 (100.0) | 10             | 35     | 8.91   | 3.66  |       |
| Kidney and urinary tract tuberculosis (%)               | 0 (0.0)  | 1 (8.3)   | 1 (8.3)     | 1 (8.3)     | 0 (0.0)     | 0 (0.0)      | 5 (41.7)     | 2 (16.7)     | 0 (0.0)      | 0 (0.0)     | 0 (0.0)     | 0 (0.0)     | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 12 (100.0) | 4              | 16     | 7.14   | 2.61  |       |
| Kidney and urinary tract stone (%)                      | 0 (0.0)  | 1 (2.7)   | 0 (0.0)     | 2 (5.4)     | 2 (5.4)     | 5 (13.5)     | 5 (13.5)     | 2 (5.4)      | 5 (13.5)     | 4 (10.8)    | 2 (5.4)     | 3 (8.1)     | 1 (2.7)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 3 (8.1)   | 2 (5.4)    | 37 (100.0)     | 17     | 54     | 10.27 | 5.14  |
| Kidney and urinary tract tumor (%)                      | 3 (3.9)  | 2 (2.6)   | 7 (9.2)     | 3 (3.9)     | 8 (10.5)    | 8 (10.5)     | 12 (15.8)    | 6 (7.9)      | 7 (9.2)      | 6 (7.9)     | 4 (5.3)     | 2 (2.6)     | 2 (2.6)   | 1 (1.3)   | 2 (2.6)   | 2 (2.6)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 1 (1.3)    | 76 (100.0)     | 68     | 144    | 7.95  | 3.82  |
| Obstructive urinary tract difficulty (%)                | 0 (0.0)  | 0 (0.0)   | 0 (0.0)     | 2 (3.6)     | 4 (7.3)     | 3 (5.3)      | 9 (16.4)     | 9 (16.4)     | 9 (16.4)     | 6 (10.9)    | 3 (5.5)     | 3 (5.5)     | 1 (1.8)   | 0 (0.0)   | 2 (3.6)   | 0 (0.0)   | 1 (1.8)   | 1 (1.8)   | 1 (1.8)   | 1 (1.8)    | 55 (100.0)     | 42     | 97     | 9.93  | 4.31  |
| Myeloma (%)   | 0 (0.0)  | 0 (0.0)   | 4 (4.1)     | 0 (0.0)     | 1 (1.0)     | 9 (9.2)      | 11 (11.1)    | 16 (16.4)    | 8 (8.0)      | 9 (9.4)     | 9 (9.4)     | 5 (5.5)     | 0 (0.0)   | 2 (2.7)   | 0 (0.0)   | 0 (0.0)   | 1 (1.3)   | 1 (1.3)   | 1 (1.3)   | 2 (2.7)    | 75 (100.0)     | 64     | 139    | 9.52  | 3.56  |
| Hypoplastic kidney (%)                                  | 1 (3.6)  | 1 (3.6)   | 1 (3.6)     | 2 (7.1)     | 0 (0.0)     | 3 (10.7)     | 2 (7.1)      | 6 (21.3)     | 0 (0.0)      | 3 (10.7)    | 2 (7.1)     | 1 (3.6)     | 1 (3.6)   | 1 (3.6)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 3 (3.6)    | 28 (100.0)     | 19     | 47     | 10.07 | 5.80  |
| Unspecified (%)   | 9 (0.6)  | 40 (2.6)  | 64 (4.1)    | 124 (7.9)   | 145 (9.2)   | 184 (11.7)   | 192 (12.2)   | 230 (14.7)   | 148 (9.4)    | 120 (7.7)   | 94 (6.0)    | 65 (4.1)    | 42 (2.7)  | 29 (1.8)  | 20 (1.3)  | 14 (0.9)  | 8 (0.5)   | 7 (0.4)   | 5 (0.3)   | 28 (1.8)   | 1 568 (100.0)  | 1 457  | 3 025  | 8.50  | 3.83  |
| Reintroduction after transplantation (%)                | 0 (0.0)  | 0 (0.0)   | 1 (2.0)     | 4 (7.8)     | 5 (9.8)     | 11 (21.6)    | 10 (19.6)    | 11 (21.6)    | 6 (11.8)     | 1 (2.0)     | 4 (7.8)     | 4 (7.8)     | 2 (3.9)   | 0 (0.0)   | 1 (2.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)    | 51 (100.0)     | 40     | 91     | 8.53  | 3.08  |
| Others (%)  | 12 (2.9)   | 20 (4.8)  | 30 (7.2)    | 47 (11.2)   | 55 (13.2)   | 42 (10.0)    | 46 (10.8)    | 48 (11.6)    | 31 (7.7)     | 13 (3.1)    | 13 (3.1)    | 9 (2.2)     | 5 (1.2)   | 3 (0.7)   | 4 (1.0)   | 4 (1.0)   | 4 (1.0)   | 2 (0.5)   | 2 (0.5)   | 2 (0.5)    | 418 (100.0)    | 348    | 766    | 7.26  | 3.40  |
| Subtotal (%)  | 104 (0.6)  | 331 (1.9) | 664 (3.7)   | 1 204 (6.8) | 1 752 (9.9) | 2 166 (12.2) | 2 508 (14.1) | 2 792 (15.7) | 1 990 (11.2) | 1 367 (7.7) | 912 (5.1)   | 606 (3.4)   | 398 (2.2) | 249 (1.4) | 189 (1.1) | 125 (0.7) | 89 (0.5)  | 73 (0.4)  | 47 (0.3)  | 193 (1.1)  | 17 759 (100.0) | 12 650 | 30 409 | 8.34  | 3.55  |
| No information available (%)                            | 104 (0.6)  | 331 (1.9) | 664 (3.7)   | 1 204 (6.8) | 1 752 (9.9) | 2 166 (12.2) | 2 508 (14.1) | 2 792 (15.7) | 1 990 (11.2) | 1 367 (7.7) | 912 (5.1)   | 606 (3.4)   | 398 (2.2) | 249 (1.4) | 189 (1.1) | 125 (0.7) | 89 (0.5)  | 73 (0.4)  | 47 (0.3)  | 193 (1.1)  | 17 765 (100.0) | 95     | 101    | 7.97  | 2.19  |
| Total (%)   | 208 (0.6)  | 662 (1.9) | 1 328 (3.7) | 2 408 (6.8) | 3 518 (9.9) | 4 332 (12.2) | 5 016 (14.1) | 5 584 (15.7) | 3 980 (11.2) | 2 734 (7.7) | 1 824 (5.1) | 1 212 (3.4) | 836 (2.2) | 498 (1.4) | 318 (1.1) | 214 (0.7) | 132 (0.5) | 120 (0.4) | 94 (0.3)  | 386 (1.1)  | 35 524 (100.0) | 12 745 | 30 510 | 8.34  | 3.55  |

Values in parentheses below each figure represent the percentage relative to the total of each row.

**TABLE 57.** Estimated glomerular filtration rates (eGFR) at the introduction to dialysis and the treatment methods used at the end of year of introduction (only patients begun on dialysis in 2007 who responded to the questionnaire using floppy disks)

| Method of dialysis        | eGFR at the introduction to dialysis (mL/min/1.73 m <sup>2</sup> ) |           |             |             |             |           |           |           |           |           |           |           |           | Subtotal | No information available | Total   | Mean     | SD             |           |           |           |       |
|---------------------------|--|-----------|-------------|-------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|--------------------------|---------|----------|----------------|-----------|-----------|-----------|-------|
|                           | <1.0   | 1.0-1.9   | 2.0-2.9     | 4.0-5.9     | 6.0-7.9     | 8.0-9.9   | 10.0-11.9 | 12.0-13.9 | 14.0-15.9 | 16.0-17.9 | 18.0-19.9 | 20.0-21.9 | 22.0-23.9 |          |                          |         |          |                | 24.0-25.9 | 26.0-27.9 | 28.0-29.9 | ≥30.0 |
| Facility hemodialysis (%) | 22 (0.2)   | 326 (2.3) | 4513 (31.9) | 5390 (38.1) | 2126 (15.0) | 843 (6.0) | 370 (2.6) | 203 (1.4) | 106 (0.8) | 87 (0.6)  | 47 (0.3)  | 26 (0.2)  | 12 (0.1)  | 15 (0.1) | 13 (0.1)                 | 5 (0.0) | 29 (0.2) | 14 133 (100.0) | 13 926    | 28 059    | 5.44      | 3.39  |
| Hemodiafiltration (%)     | 1 (0.2)  | 9 (2.1)   | 123 (28.7)  | 176 (41.1)  | 61 (14.3)   | 26 (6.1)  | 9 (2.1)   | 7 (1.6)   | 1 (0.2)   | 7 (1.6)   | 2 (0.5)   | 2 (0.5)   | 1 (0.2)   | 1 (0.2)  | 1 (0.2)                  | 1 (0.0) | 0 (0.0)  | 428 (100.0)    | 338       | 766       | 5.70      | 3.63  |
| Hemofiltration (%)        | 0 (0.0)  | 0 (0.0)   | 1 (10.0)    | 5 (50.0)    | 3 (30.0)    | 1 (10.0)  | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)  | 0 (0.0)                  | 0 (0.0) | 0 (0.0)  | 10 (100.0)     | 12        | 22        | 5.86      | 1.82  |
| Hemoadsorption (%)        | 0 (0.0)  | 0 (0.0)   | 0 (0.0)     | 0 (0.0)     | 0 (0.0)     | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)  | 0 (0.0)                  | 0 (0.0) | 0 (0.0)  | 0 (0.0)        | 3         | 3         | -         | -     |
| Home hemodialysis (%)     | 0 (0.0)  | 0 (0.0)   | 2 (100.0)   | 0 (0.0)     | 0 (0.0)     | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)  | 0 (0.0)                  | 0 (0.0) | 0 (0.0)  | 2 (100.0)      | 1         | 3         | 3.25      | 0.25  |
| Peritoneal dialysis (%)   | 0 (0.0)  | 12 (1.6)  | 273 (35.8)  | 315 (41.3)  | 96 (12.6)   | 35 (4.6)  | 14 (1.8)  | 6 (0.8)   | 4 (0.5)   | 0 (0.0)   | 1 (0.1)   | 1 (0.1)   | 1 (0.1)   | 0 (0.0)  | 1 (0.1)                  | 1 (0.1) | 3 (0.4)  | 763 (100.0)    | 894       | 1 657     | 5.19      | 4.11  |
| Total (%)                 | 23 (0.1)   | 347 (2.3) | 4912 (32.0) | 5886 (38.4) | 2286 (14.9) | 905 (5.9) | 393 (2.6) | 216 (1.4) | 111 (0.7) | 94 (0.6)  | 50 (0.3)  | 29 (0.2)  | 14 (0.1)  | 16 (0.1) | 15 (0.1)                 | 7 (0.0) | 32 (0.2) | 15 336 (100.0) | 15 174    | 30 510    | 5.43      | 3.43  |

Values in parentheses below each figure represent the percentage relative to the total of each row.

**TABLE 58.** Estimated glomerular filtration rates (eGFR) at the introduction to dialysis and gender (only patients begun on dialysis in 2007 who responded to the questionnaire using floppy disks)

| Gender                   | eGFR at introduction into dialysis (mL/min/1.73 m <sup>2</sup> ) |           |             |             |             |           |           |           |           |           |           |           |           | Subtotal | No information available | Total   | Mean     | SD             |           |           |           |       |   |
|--------------------------|--|-----------|-------------|-------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|--------------------------|---------|----------|----------------|-----------|-----------|-----------|-------|---|
|                          | <1.0   | 1.0-1.9   | 2.0-2.9     | 4.0-5.9     | 6.0-7.9     | 8.0-9.9   | 10.0-11.9 | 12.0-13.9 | 14.0-15.9 | 16.0-17.9 | 18.0-19.9 | 20.0-21.9 | 22.0-23.9 |          |                          |         |          |                | 24.0-25.9 | 26.0-27.9 | 28.0-29.9 | ≥30.0 |   |
| Male (%)                 | 10 (0.1)   | 174 (1.8) | 2515 (25.5) | 4169 (42.3) | 1649 (16.7) | 661 (6.7) | 280 (2.8) | 153 (1.6) | 68 (0.7)  | 65 (0.7)  | 35 (0.4)  | 16 (0.2)  | 8 (0.1)   | 14 (0.1) | 8 (0.1)                  | 3 (0.0) | 21 (0.2) | 9 849 (100.0)  | 9 899     | 19 748    | 5.68      | 3.49  |   |
| Female (%)               | 13 (0.2)   | 173 (3.2) | 2397 (43.7) | 1717 (31.3) | 637 (11.6)  | 244 (4.4) | 113 (2.1) | 63 (1.1)  | 43 (0.8)  | 29 (0.5)  | 15 (0.3)  | 13 (0.2)  | 6 (0.1)   | 2 (0.0)  | 7 (0.1)                  | 4 (0.1) | 11 (0.2) | 5 487 (100.0)  | 5 275     | 10 762    | 4.99      | 3.29  |   |
| Subtotal (%)             | 23 (0.1)   | 347 (2.3) | 4912 (32.0) | 5886 (38.4) | 2286 (14.9) | 905 (5.9) | 393 (2.6) | 216 (1.4) | 111 (0.7) | 94 (0.6)  | 50 (0.3)  | 29 (0.2)  | 14 (0.1)  | 16 (0.1) | 15 (0.1)                 | 7 (0.0) | 32 (0.2) | 15 336 (100.0) | 15 174    | 30 510    | 5.43      | 3.43  |   |
| No information available | 0 (0.0)  | 0 (0.0)   | 0 (0.0)     | 0 (0.0)     | 0 (0.0)     | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)  | 0 (0.0)                  | 0 (0.0) | 0 (0.0)  | 0 (0.0)        | 0         | 0         | 0         | -     | - |
| Total (%)                | 23 (0.1)   | 347 (2.3) | 4912 (32.0) | 5886 (38.4) | 2286 (14.9) | 905 (5.9) | 393 (2.6) | 216 (1.4) | 111 (0.7) | 94 (0.6)  | 50 (0.3)  | 29 (0.2)  | 14 (0.1)  | 16 (0.1) | 15 (0.1)                 | 7 (0.0) | 32 (0.2) | 15 336 (100.0) | 15 174    | 30 510    | 5.43      | 3.43  |   |

Values in parentheses below each figure represent the percentage relative to the total of each row.

**TABLE 59.** Estimated glomerular filtration rates (eGFR) at the introduction to dialysis and age (only patients begun on dialysis in 2007 who responded to the questionnaire using floppy disks)

| Age (years)              | eGFR at the introduction to dialysis (mL/min/1.73 m <sup>2</sup> ) |        |        |        |        |        |        |        |        |         |         |         |         |         |         |         | Subtotal | No information available | Total | Mean  | SD      |         |         |         |       |      |  |
|--------------------------|--|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|----------|--------------------------|-------|-------|---------|---------|---------|---------|-------|------|--|
|                          | <10  | 10-19  | 20-29  | 30-49  | 50-59  | 60-69  | 70-79  | 80-89  | 90-99  | 100-119 | 120-139 | 140-159 | 160-179 | 180-199 | 200-219 | 220-239 |          |                          |       |       |         | 240-259 | 260-279 | 280-299 | ≥300  |      |  |
| <15                      | 0  | 0      | 0      | 2      | 1      | 1      | 3      | 1      | 1      | 2       | 1       | 1       | 0       | 0       | 0       | 0       | 0        | 0                        | 0     | 0     | 0       | 10      | 18      | 28      | 9.68  | 3.14 |  |
| (%)                      | (0.0)  | (0.0)  | (0.0)  | (20.0) | (10.0) | (10.0) | (30.0) | (10.0) | (10.0) | (20.0)  | (10.0)  | (10.0)  | (0.0)   | (0.0)   | (0.0)   | (0.0)   | (0.0)    | (0.0)                    | (0.0) | (0.0) | (0.0)   | (100.0) | (100.0) | (100.0) |       |      |  |
| 15-29                    | 0  | 14     | 52     | 1      | 2      | 2      | 10     | 2      | 3      | 1       | 2       | 0       | 0       | 0       | 0       | 0       | 0        | 0                        | 0     | 0     | 1       | 114     | 137     | 251     | 4.51  | 3.60 |  |
| (%)                      | (0.0)  | (12.3) | (45.6) | (0.9)  | (1.8)  | (1.8)  | (8.8)  | (2.6)  | (2.6)  | (0.9)   | (1.8)   | (0.0)   | (0.0)   | (0.0)   | (0.0)   | (0.0)   | (0.0)    | (0.0)                    | (0.0) | (0.0) | (0.9)   | (100.0) | (100.0) | (100.0) |       |      |  |
| 30-49                    | 3  | 56     | 329    | 4      | 3      | 3      | 68     | 32     | 13     | 4       | 3       | 4       | 4       | 0       | 4       | 0       | 0        | 0                        | 0     | 0     | 0       | 774     | 832     | 1 606   | 4.54  | 2.72 |  |
| (%)                      | (0.4)  | (7.2)  | (42.5) | (0.5)  | (0.4)  | (0.4)  | (8.8)  | (4.1)  | (1.7)  | (0.5)   | (0.4)   | (0.5)   | (0.0)   | (0.0)   | (0.5)   | (0.0)   | (0.0)    | (0.0)                    | (0.0) | (0.0) | (0.0)   | (100.0) | (100.0) | (100.0) |       |      |  |
| 45-59                    | 7  | 117    | 1170   | 29     | 14     | 14     | 366    | 125    | 56     | 29      | 14      | 14      | 10      | 3       | 1       | 2       | 2        | 3                        | 2     | 2     | 5       | 3 029   | 2 928   | 5 957   | 4.96  | 3.27 |  |
| (%)                      | (0.2)  | (3.9)  | (38.6) | (0.5)  | (0.5)  | (0.5)  | (12.1) | (4.1)  | (1.8)  | (1.0)   | (0.5)   | (0.5)   | (0.3)   | (0.1)   | (0.0)   | (0.1)   | (0.1)    | (0.1)                    | (0.1) | (0.1) | (0.2)   | (100.0) | (100.0) | (100.0) |       |      |  |
| 60-74                    | 5  | 115    | 2069   | 85     | 38     | 32     | 943    | 315    | 146    | 85      | 38      | 32      | 18      | 13      | 5       | 8       | 5        | 5                        | 3     | 3     | 15      | 6 323   | 6 144   | 12 467  | 5.37  | 3.54 |  |
| (%)                      | (0.1)  | (1.8)  | (32.7) | (1.3)  | (0.6)  | (0.5)  | (14.9) | (5.0)  | (2.3)  | (1.3)   | (0.6)   | (0.5)   | (0.3)   | (0.2)   | (0.1)   | (0.1)   | (0.1)    | (0.1)                    | (0.0) | (0.0) | (0.2)   | (100.0) | (100.0) | (100.0) |       |      |  |
| 75-89                    | 8  | 44     | 1246   | 87     | 49     | 42     | 855    | 406    | 167    | 87      | 49      | 42      | 21      | 8       | 7       | 6       | 7        | 7                        | 1     | 1     | 9       | 4 880   | 4 882   | 9 762   | 5.91  | 3.37 |  |
| (%)                      | (0.2)  | (0.9)  | (25.5) | (1.8)  | (1.0)  | (0.9)  | (17.5) | (8.3)  | (3.4)  | (1.8)   | (1.0)   | (0.9)   | (0.4)   | (0.2)   | (0.1)   | (0.1)   | (0.1)    | (0.1)                    | (0.0) | (0.0) | (0.2)   | (100.0) | (100.0) | (100.0) |       |      |  |
| ≥90                      | 0  | 1      | 46     | 8      | 4      | 2      | 43     | 22     | 7      | 8       | 4       | 2       | 1       | 1       | 1       | 0       | 0        | 0                        | 0     | 0     | 2       | 206     | 215     | 421     | 6.67  | 4.16 |  |
| (%)                      | (0.0)  | (0.5)  | (22.3) | (3.9)  | (3.4)  | (3.4)  | (20.9) | (10.7) | (3.4)  | (3.9)   | (1.9)   | (1.0)   | (0.5)   | (0.5)   | (0.5)   | (0.0)   | (0.0)    | (0.0)                    | (0.0) | (0.0) | (1.0)   | (100.0) | (100.0) | (100.0) |       |      |  |
| Subtotal                 | 23   | 347    | 4912   | 216    | 111    | 111    | 2 286  | 905    | 393    | 216     | 111     | 94      | 50      | 29      | 14      | 16      | 15       | 7                        | 7     | 32    | 15 336  | 15 156  | 30 492  | 5.43    | 3.43  |      |  |
| (%)                      | (0.1)  | (2.3)  | (32.0) | (1.4)  | (0.7)  | (0.7)  | (14.9) | (5.9)  | (2.6)  | (1.4)   | (0.7)   | (0.6)   | (0.3)   | (0.2)   | (0.1)   | (0.1)   | (0.1)    | (0.1)                    | (0.0) | (0.2) | (100.0) | (100.0) | (100.0) |         |       |      |  |
| No information available | 0  | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0        | 0                        | 0     | 0     | 0       | 0       | 18      | 18      | 18    |      |  |
| Total                    | 23   | 347    | 4912   | 216    | 111    | 111    | 2 286  | 905    | 393    | 216     | 111     | 94      | 50      | 29      | 14      | 16      | 15       | 7                        | 7     | 32    | 15 336  | 15 174  | 30 510  | 5.43    | 3.43  |      |  |
| (%)                      | (0.1)  | (2.3)  | (32.0) | (1.4)  | (0.7)  | (0.7)  | (14.9) | (5.9)  | (2.6)  | (1.4)   | (0.7)   | (0.6)   | (0.3)   | (0.2)   | (0.1)   | (0.1)   | (0.1)    | (0.1)                    | (0.0) | (0.2) | (100.0) | (100.0) | (100.0) |         |       |      |  |
| Mean                     | 63.17  | 57.26  | 65.06  | 70.68  | 70.59  | 70.68  | 69.80  | 70.82  | 70.59  | 70.68   | 70.27   | 70.91   | 71.50   | 65.59   | 75.64   | 71.81   | 69.80    | 62.57                    | 68.91 | 67.39 | 67.33   | 67.28   | 67.33   | 67.33   | 67.33 |      |  |
| SD                       | 14.73  | 15.35  | 13.26  | 12.79  | 12.95  | 12.79  | 12.30  | 12.92  | 12.95  | 12.79   | 15.11   | 12.51   | 11.70   | 16.50   | 10.53   | 11.07   | 12.43    | 13.65                    | 14.59 | 13.07 | 13.07   | 13.37   | 13.37   | 13.22   | 13.22 |      |  |

Values in parentheses below each figure represent % relative to the total of each row.

**TABLE 60.** Estimated glomerular filtration rates (eGFR) at the introduction to dialysis and primary diseases (only patients begun on dialysis in 2007 who responded to the questionnaire using floppy disks)

| Primary disease   | eGFR at introduction into dialysis (mL/min/1.73 m <sup>2</sup> ) |           |               |               |              |            |            |           |           |           |           | Subtotal | No information available | Total    | Mean    | SD       |           |                |           |           |           |       |
|---|--|-----------|---------------|---------------|--------------|------------|------------|-----------|-----------|-----------|-----------|----------|--------------------------|----------|---------|----------|-----------|----------------|-----------|-----------|-----------|-------|
|   | <10  | 1.0-1.9   | 2.0-2.9       | 4.0-5.9       | 6.0-7.9      | 8.0-9.9    | 10.0-11.9  | 12.0-13.9 | 14.0-15.9 | 16.0-17.9 | 18.0-19.9 |          |                          |          |         |          | 20.0-21.9 | 22.0-23.9      | 24.0-25.9 | 26.0-27.9 | 28.0-29.9 | ≥30.0 |
| Chronic glomerulonephritis (%)                          | 8 (0.2)  | 128 (3.7) | 1338 (38.7)   | 1273 (36.8)   | 416 (12.0)   | 147 (4.2)  | 60 (1.7)   | 29 (0.8)  | 17 (0.5)  | 19 (0.5)  | 6 (0.2)   | 2 (0.1)  | 3 (0.1)                  | 3 (0.1)  | 3 (0.1) | 1 (0.0)  | 8 (0.2)   | 3461 (100.0)   | 3 539     | 7 000     | 4.94      | 3.30  |
| Chronic pyelonephritis (%)                              | 1 (0.0)  | 4 (0.0)   | 46 (1.3)      | 37 (1.0)      | 13 (0.3)     | 6 (0.2)    | 0 (0.0)    | 0 (0.0)   | 1 (0.0)   | 1 (0.0)   | 0 (0.0)   | 0 (0.0)  | 0 (0.0)                  | 0 (0.0)  | 0 (0.0) | 0 (0.0)  | 0 (0.0)   | 109 (3.1)      | 105       | 214       | 4.63      | 2.31  |
| Rapidly progressive glomerulonephritis (%)              | 0 (0.0)  | 11 (0.3)  | 94 (2.7)      | 83 (2.4)      | 37 (1.0)     | 15 (0.4)   | 6 (0.2)    | 1 (0.0)   | 2 (0.0)   | 2 (0.0)   | 1 (0.0)   | 0 (0.0)  | 0 (0.0)                  | 0 (0.0)  | 0 (0.0) | 0 (0.0)  | 0 (0.0)   | 253 (7.3)      | 258       | 511       | 5.08      | 2.99  |
| Nephropathy of pregnancy / pregnancy toxemia (%)        | 1 (0.0)  | 0 (0.0)   | 12 (0.3)      | 7 (0.2)       | 3 (0.0)      | 0 (0.0)    | 0 (0.0)    | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)  | 0 (0.0)                  | 0 (0.0)  | 0 (0.0) | 0 (0.0)  | 0 (0.0)   | 23 (0.7)       | 16        | 39        | 3.96      | 1.70  |
| Other nephritides that cannot be classified (%)         | 4 (0.1)  | 3 (0.0)   | 30 (0.8)      | 24 (0.7)      | 7 (0.2)      | 3 (0.0)    | 3 (0.0)    | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)  | 0 (0.0)                  | 0 (0.0)  | 0 (0.0) | 0 (0.0)  | 0 (0.0)   | 71 (2.0)       | 60        | 131       | 4.84      | 2.65  |
| Polycystic kidney disease (%)                           | 2 (0.0)  | 15 (0.4)  | 163 (4.7)     | 155 (4.4)     | 43 (1.2)     | 6 (0.2)    | 2 (0.0)    | 0 (0.0)   | 1 (0.0)   | 0 (0.0)   | 1 (0.0)   | 0 (0.0)  | 0 (0.0)                  | 0 (0.0)  | 0 (0.0) | 0 (0.0)  | 0 (0.0)   | 388 (11.2)     | 306       | 694       | 4.41      | 1.79  |
| Nephrosclerosis (%)                                     | 0 (0.0)  | 25 (0.7)  | 610 (17.5)    | 709 (20.4)    | 268 (7.6)    | 110 (3.1)  | 44 (1.2)   | 29 (0.8)  | 10 (0.3)  | 8 (0.2)   | 4 (0.1)   | 2 (0.0)  | 2 (0.0)                  | 1 (0.0)  | 2 (0.0) | 0 (0.0)  | 1 (0.0)   | 1 825 (52.7)   | 1 555     | 3 380     | 5.31      | 2.90  |
| Malignant hypertension (%)                              | 0 (0.0)  | 5 (0.1)   | 30 (0.8)      | 36 (1.0)      | 13 (0.3)     | 1 (0.0)    | 1 (0.0)    | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)  | 0 (0.0)                  | 0 (0.0)  | 0 (0.0) | 0 (0.0)  | 0 (0.0)   | 86 (2.4)       | 102       | 188       | 4.36      | 1.74  |
| Diabetic nephropathy (%)                                | 10 (0.3)   | 82 (2.3)  | 1 852 (52.8)  | 2 785 (79.7)  | 1 170 (33.3) | 468 (13.5) | 199 (5.7)  | 120 (3.4) | 49 (1.4)  | 41 (1.1)  | 28 (0.8)  | 17 (0.5) | 8 (0.2)                  | 8 (0.2)  | 2 (0.0) | 13 (0.4) | 2 (0.0)   | 6 860 (198.0)  | 6 511     | 13 371    | 5.73      | 3.44  |
| Systemic lupus erythematosus nephritis (%)              | 1 (0.0)  | 0 (0.0)   | 36 (1.0)      | 41 (1.1)      | 19 (0.5)     | 14 (0.4)   | 3 (0.0)    | 1 (0.0)   | 2 (0.0)   | 1 (0.0)   | 1 (0.0)   | 1 (0.0)  | 0 (0.0)                  | 0 (0.0)  | 0 (0.0) | 0 (0.0)  | 1 (0.0)   | 121 (3.5)      | 104       | 225       | 6.15      | 3.98  |
| Amyloidotic kidney (%)                                  | 0 (0.0)  | 0 (0.0)   | 22 (0.6)      | 19 (0.5)      | 15 (0.4)     | 8 (0.2)    | 2 (0.0)    | 1 (0.0)   | 0 (0.0)   | 1 (0.0)   | 1 (0.0)   | 0 (0.0)  | 0 (0.0)                  | 0 (0.0)  | 0 (0.0) | 0 (0.0)  | 0 (0.0)   | 71 (2.0)       | 86        | 157       | 6.48      | 4.50  |
| Gouty kidney (%)  | 0 (0.0)  | 0 (0.0)   | 16 (0.4)      | 24 (0.7)      | 8 (0.2)      | 1 (0.0)    | 2 (0.0)    | 2 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)  | 0 (0.0)                  | 0 (0.0)  | 0 (0.0) | 0 (0.0)  | 0 (0.0)   | 54 (1.5)       | 31        | 85        | 5.40      | 3.07  |
| Renal failure due to congenital abnormal metabolism (%) | 0 (0.0)  | 1 (0.0)   | 4 (0.1)       | 9 (0.2)       | 2 (0.0)      | 0 (0.0)    | 0 (0.0)    | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)  | 0 (0.0)                  | 0 (0.0)  | 0 (0.0) | 0 (0.0)  | 0 (0.0)   | 16 (0.4)       | 19        | 35        | 4.30      | 1.37  |
| Kidney and urinary tract tuberculosis (%)               | 0 (0.0)  | 0 (0.0)   | 3 (0.0)       | 6 (0.1)       | 1 (0.0)      | 0 (0.0)    | 1 (0.0)    | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)  | 0 (0.0)                  | 0 (0.0)  | 0 (0.0) | 0 (0.0)  | 0 (0.0)   | 12 (0.3)       | 4         | 16        | 5.97      | 3.70  |
| Kidney and urinary tract stone (%)                      | 0 (0.0)  | 4 (0.1)   | 11 (0.3)      | 10 (0.2)      | 3 (0.0)      | 0 (0.0)    | 1 (0.0)    | 0 (0.0)   | 0 (0.0)   | 1 (0.0)   | 0 (0.0)   | 0 (0.0)  | 0 (0.0)                  | 0 (0.0)  | 0 (0.0) | 0 (0.0)  | 0 (0.0)   | 30 (0.8)       | 24        | 54        | 4.63      | 2.99  |
| Kidney and urinary tract tumor (%)                      | 0 (0.0)  | 1 (0.0)   | 22 (0.6)      | 20 (0.5)      | 10 (0.2)     | 0 (0.0)    | 4 (0.1)    | 2 (0.0)   | 1 (0.0)   | 2 (0.0)   | 0 (0.0)   | 0 (0.0)  | 0 (0.0)                  | 0 (0.0)  | 0 (0.0) | 0 (0.0)  | 3 (0.0)   | 65 (1.8)       | 79        | 144       | 7.35      | 8.65  |
| Obstructive urinary tract difficulty (%)                | 0 (0.0)  | 3 (0.0)   | 21 (0.6)      | 19 (0.5)      | 5 (0.1)      | 0 (0.0)    | 0 (0.0)    | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)  | 0 (0.0)                  | 0 (0.0)  | 0 (0.0) | 0 (0.0)  | 0 (0.0)   | 48 (1.3)       | 49        | 97        | 4.07      | 1.39  |
| Myeloma (%)   | 0 (0.0)  | 4 (0.1)   | 24 (0.7)      | 26 (0.7)      | 3 (0.0)      | 2 (0.0)    | 1 (0.0)    | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)  | 0 (0.0)                  | 0 (0.0)  | 0 (0.0) | 0 (0.0)  | 0 (0.0)   | 60 (1.7)       | 79        | 139       | 4.25      | 1.78  |
| Hypoplastic kidney (%)                                  | 0 (0.0)  | 4 (0.1)   | 10 (0.2)      | 6 (0.1)       | 1 (0.0)      | 2 (0.0)    | 1 (0.0)    | 1 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)  | 0 (0.0)                  | 0 (0.0)  | 0 (0.0) | 0 (0.0)  | 0 (0.0)   | 26 (0.7)       | 21        | 47        | 5.24      | 4.00  |
| Unspecified (%)   | 0 (0.0)  | 51 (1.4)  | 453 (12.8)    | 464 (13.2)    | 183 (5.2)    | 86 (2.4)   | 46 (1.3)   | 21 (0.6)  | 16 (0.4)  | 12 (0.3)  | 5 (0.1)   | 4 (0.1)  | 1 (0.0)                  | 1 (0.0)  | 0 (0.0) | 1 (0.0)  | 1 (0.0)   | 1 345 (38.3)   | 1 680     | 3 025     | 5.45      | 3.60  |
| Reintroduction after transplantation (%)                | 0 (0.0)  | 0 (0.0)   | 10 (0.2)      | 20 (0.5)      | 6 (0.1)      | 6 (0.1)    | 2 (0.0)    | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)  | 0 (0.0)                  | 0 (0.0)  | 0 (0.0) | 0 (0.0)  | 0 (0.0)   | 44 (1.2)       | 47        | 91        | 5.45      | 2.23  |
| Others (%)  | 0 (0.0)  | 6 (0.1)   | 103 (2.9)     | 111 (3.1)     | 60 (1.7)     | 29 (0.8)   | 15 (0.4)   | 9 (0.2)   | 11 (0.3)  | 4 (0.1)   | 2 (0.0)   | 2 (0.0)  | 2 (0.0)                  | 2 (0.0)  | 2 (0.0) | 2 (0.0)  | 5 (0.1)   | 363 (10.5)     | 403       | 766       | 6.85      | 5.45  |
| Subtotal (%)  | 23 (0.6)   | 347 (9.7) | 4 910 (139.8) | 5 884 (168.7) | 2 286 (64.8) | 904 (25.8) | 393 (11.1) | 216 (6.1) | 111 (3.1) | 94 (2.6)  | 50 (1.4)  | 29 (0.8) | 14 (0.4)                 | 15 (0.4) | 7 (0.2) | 32 (0.9) | 32 (0.9)  | 15 331 (437.0) | 15 078    | 30 409    | 5.43      | 3.43  |
| No information available (%)                            | 0 (0.0)  | 0 (0.0)   | 2 (0.0)       | 2 (0.0)       | 0 (0.0)      | 1 (0.0)    | 0 (0.0)    | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)   | 0 (0.0)  | 0 (0.0)                  | 0 (0.0)  | 0 (0.0) | 0 (0.0)  | 0 (0.0)   | 5 (0.1)        | 96        | 101       | 5.31      | 2.45  |
| Total (%)   | 23 (0.6)   | 347 (9.7) | 4 912 (139.8) | 5 886 (168.7) | 2 286 (64.8) | 905 (25.8) | 393 (11.1) | 216 (6.1) | 111 (3.1) | 94 (2.6)  | 50 (1.4)  | 29 (0.8) | 14 (0.4)                 | 16 (0.4) | 7 (0.2) | 32 (0.9) | 32 (0.9)  | 15 336 (437.0) | 15 174    | 30 510    | 5.43      | 3.43  |

Values in parentheses below each figure represent the percentage relative to the total of each row.

eGFR of male patients =  $186 \times (\text{serum creatinine concentration prior to first dialysis}^{-1.154}) \times (\text{age at introduction into dialysis}^{-0.203}) \times 0.881$

When the serum creatinine concentration was determined by the enzyme method, the following equation was used:

eGFR of male patients =  $175 \times (\text{serum creatinine concentration prior to first dialysis}^{-1.154}) \times (\text{age at introduction to dialysis}^{-0.203}) \times 0.741$

The eGFR of female patients was calculated by multiplying the value obtained using the above equations, that is, the eGFR of male patients, by 0.742.

*a. Treatment method at the end of year of introduction into dialysis.* Table 57 shows the relationship between eGFR at the introduction to dialysis and the treatment method at the end of the year of introduction (2007). The mean eGFR at the introduction to dialysis of patients who underwent home hemodialysis was as low as  $3.25 (\pm 0.25)$  mL/min, which was difficult to evaluate accurately because the number of patients evaluated was only two. No significant difference in eGFR was found among the patients who were treated by other methods.

*b. Gender.* Table 58 shows the relationship between eGFR at the introduction to dialysis and gender. Similarly to the result of the 2006 survey, the eGFR of female patients was lower than that of male patients, despite the fact that the serum creatinine concentration at the introduction to dialysis of the female patients was lower than that of the male patients.

*c. Age.* Table 59 shows the relationship between eGFR at the introduction to dialysis and age. The eGFR of the patients tended to increase with age, which was similar to that in the 2006 survey.

*d. Primary disease.* Table 60 shows the relationship between eGFR at the introduction to dialysis and primary disease. The eGFR tended to be high for patients with renal or urinary tract tumors, amyloid nephropathy, SLE nephritis, and diabetic nephropathy as the primary diseases.

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