

CHAPTER 7

Management of Anaemia in Patients on Dialysis

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SECTION 7.1: TREATMENT FOR ANAEMIA IN DIALYSIS

From 1999 – 2008, there was an increasing percentage of patients receiving erythropoietin (EPO); more haemodialysis patients were on EPO; 87% compared 77% in PD. The percentage of patients requiring blood transfusion has remained at 16% for both HD and PD patients over the last few years.

There were a decreasing number of patients receiving oral iron, with a significant increase of HD patients on parenteral iron. (Table 7.1.1 – 7.1.2)

Table 7.1.1: Treatment for Anaemia, HD patients 1999 to 2008

| Year | No of subject | % on Erythropoietin | % receive blood transfusion | % on oral iron | % received parenteral iron |
|------|---------------|---------------------|-----------------------------|----------------|----------------------------|
| 1999 | 2996 | 51 | 15 | 90 | 5 |
| 2000 | 4392 | 56 | 15 | 88 | 5 |
| 2001 | 5194 | 62 | 13 | 88 | 5 |
| 2002 | 6108 | 67 | 10 | 85 | 7 |
| 2003 | 7017 | 71 | 12 | 83 | 8 |
| 2004 | 8064 | 74 | 11 | 80 | 10 |
| 2005 | 9344 | 80 | 14 | 74 | 11 |
| 2006 | 11679 | 83 | 18 | 76 | 16 |
| 2007 | 12907 | 85 | 15 | 74 | 17 |
| 2008 | 15280 | 87 | 16 | 63 | 23 |

Table 7.1.2: Treatment for Anaemia, PD patients 1999 to 2008

| Year | No of subject | % on Erythropoietin | % receive blood transfusion | % on oral iron | % received parenteral iron |
|------|---------------|---------------------|-----------------------------|----------------|----------------------------|
| 1999 | 610 | 44 | 14 | 94 | 0 |
| 2000 | 662 | 46 | 11 | 92 | 4 |
| 2001 | 781 | 45 | 11 | 91 | 2 |
| 2002 | 891 | 49 | 11 | 93 | 2 |
| 2003 | 1230 | 53 | 14 | 87 | 4 |
| 2004 | 1312 | 63 | 15 | 85 | 7 |
| 2005 | 1390 | 71 | 12 | 87 | 8 |
| 2006 | 1552 | 73 | 16 | 83 | 13 |
| 2007 | 1806 | 73 | 16 | 80 | 12 |
| 2008 | 2084 | 77 | 16 | 77 | 12 |

In 2008, the percentage of patients on EPO among the HD centres varied significantly from 0% to 100%. The median usage of EPO was 91% compared to 50.5% a decade ago. (Table 7.1.3)

Table 7.1.3: Variation in Erythropoietin utilization (% patients) among HD centres, 2008

| Year | No of centres | Min | 5th centile | LQ | Median | UQ | 95th centile | Max |
|------|---------------|-----|-------------|------|--------|------|--------------|-----|
| 1999 | 76 | 6 | 13 | 41.5 | 50.5 | 67.5 | 82 | 90 |
| 2000 | 108 | 0 | 20 | 43.5 | 56 | 69.5 | 90 | 100 |
| 2001 | 127 | 0 | 19 | 49 | 61 | 75 | 88 | 100 |
| 2002 | 152 | 14 | 26 | 56 | 70.5 | 79 | 91 | 100 |
| 2003 | 180 | 17 | 37 | 60 | 72.5 | 83 | 93.5 | 100 |
| 2004 | 210 | 9 | 40 | 65 | 76 | 85 | 97 | 100 |
| 2005 | 239 | 8 | 54 | 74 | 83 | 90 | 100 | 100 |
| 2006 | 293 | 3 | 55 | 79 | 86 | 93 | 100 | 100 |
| 2007 | 313 | 3 | 61 | 81 | 89 | 93 | 100 | 100 |
| 2008 | 358 | 0 | 62 | 85 | 91 | 96 | 100 | 100 |

Figure 7.1.3: Variation in Erythropoietin utilization (% patients) among HD centres, 2008

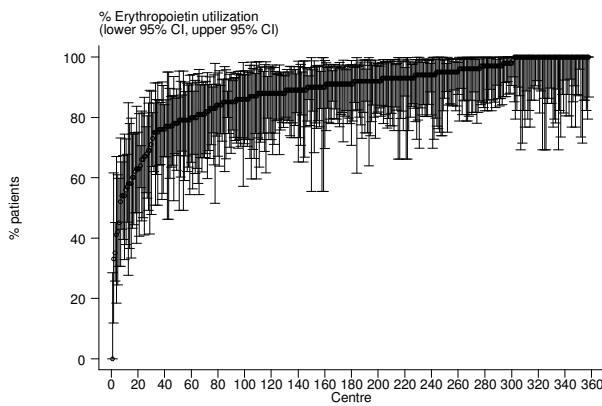
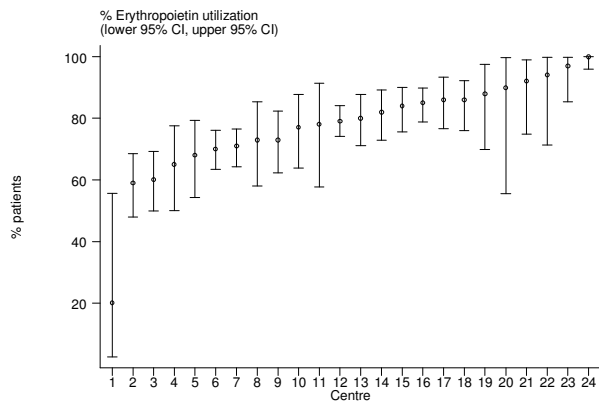


Figure 7.1.4: Variation in Erythropoietin utilization (% patients) among PD centres, 2008



In PD centres, there was a lesser variation in the EPO utilization – 20 to 100 %. The median usage of EPO was 79.5% in 2008. (Table 7.1.4)

Table 7.1.4: Variation in Erythropoietin utilization (% patients) among PD centres, 2008

| Year | No of centres | Min | 5th centile | LQ | Median | UQ | 95th centile | Max |
|------|---------------|-----|-------------|------|--------|------|--------------|-----|
| 1999 | 10 | 22 | 22 | 32 | 40.5 | 54 | 78 | 78 |
| 2000 | 11 | 26 | 26 | 33 | 47 | 56 | 70 | 70 |
| 2001 | 12 | 25 | 25 | 33 | 47 | 57 | 87 | 87 |
| 2002 | 15 | 26 | 26 | 43 | 53 | 59 | 71 | 71 |
| 2003 | 19 | 25 | 25 | 38 | 51 | 75 | 92 | 92 |
| 2004 | 19 | 5 | 5 | 53 | 64 | 79 | 97 | 97 |
| 2005 | 20 | 42 | 48.5 | 62.5 | 68.5 | 83.5 | 97 | 97 |
| 2006 | 22 | 39 | 51 | 66 | 72 | 86 | 97 | 97 |
| 2007 | 24 | 0 | 44 | 65.5 | 77 | 88.5 | 97 | 97 |
| 2008 | 24 | 20 | 59 | 70.5 | 79.5 | 87 | 97 | 100 |

The median weekly EPO dose has remained at 4000 units over the last 3 years in both HD and PD centres. (Table 7.1.5 and 7.1.6)

Table 7.1.5: Variation in median weekly Erythropoietin dose (u/week) among HD centres, 2008

| Year | No of centres | Min | 5th centile | LQ | Median | UQ | 95th centile | Max |
|------|---------------|------|-------------|------|--------|------|--------------|-------|
| 1999 | 54 | 2000 | 2000 | 2000 | 2000 | 2000 | 4000 | 4000 |
| 2000 | 79 | 2000 | 2000 | 2000 | 2000 | 2000 | 4000 | 6000 |
| 2001 | 95 | 2000 | 2000 | 2000 | 2000 | 2000 | 4000 | 5000 |
| 2002 | 118 | 2000 | 2000 | 2000 | 2000 | 2000 | 4000 | 6000 |
| 2003 | 146 | 2000 | 2000 | 2000 | 2000 | 2000 | 4000 | 5000 |
| 2004 | 177 | 2000 | 2000 | 2000 | 2000 | 2000 | 4000 | 5000 |
| 2005 | 211 | 2000 | 2000 | 2000 | 2000 | 4000 | 6000 | 16000 |
| 2006 | 276 | 2000 | 2000 | 4000 | 4000 | 6000 | 8000 | 24000 |
| 2007 | 300 | 2000 | 2000 | 4000 | 4000 | 6000 | 8000 | 16000 |
| 2008 | 348 | 2000 | 2000 | 4000 | 4000 | 5000 | 6000 | 8000 |

Figure 7.1.5: Variation in median weekly Erythropoietin dose (u/week) among HD centres, 2008

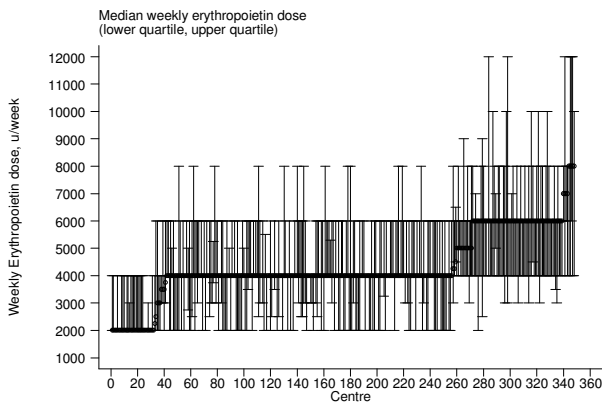


Figure 7.1.6: Variation in median weekly Erythropoietin dose (u/week) among PD centres, 2008

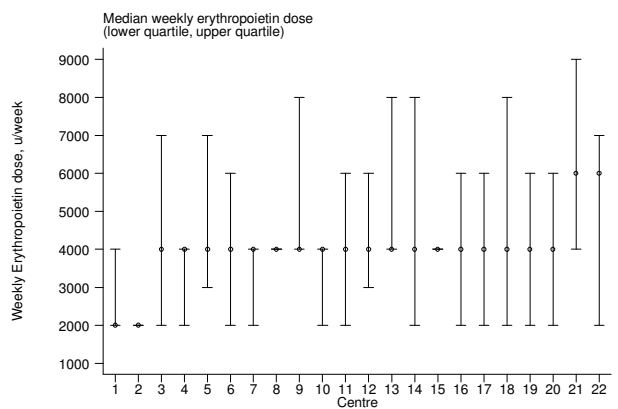


Table 7.1.6: Variation in median weekly Erythropoietin dose (u/week) among PD centres, 2008

| Year | No of centres | Min | 5th centile | LQ | Median | UQ | 95th centile | Max |
|------|---------------|------|-------------|------|--------|------|--------------|------|
| 1999 | 7 | 2000 | 2000 | 2000 | 2000 | 2000 | 4000 | 4000 |
| 2000 | 8 | 2000 | 2000 | 2000 | 2000 | 3000 | 4000 | 4000 |
| 2001 | 11 | 2000 | 2000 | 2000 | 2000 | 3000 | 4000 | 4000 |
| 2002 | 12 | 2000 | 2000 | 2000 | 2000 | 2000 | 4000 | 4000 |
| 2003 | 16 | 2000 | 2000 | 2000 | 2000 | 2000 | 4000 | 4000 |
| 2004 | 17 | 2000 | 2000 | 2000 | 2000 | 2000 | 4000 | 4000 |
| 2005 | 18 | 2000 | 2000 | 2000 | 2000 | 4000 | 6000 | 6000 |
| 2006 | 22 | 2000 | 2000 | 3000 | 4000 | 4000 | 5000 | 5500 |
| 2007 | 22 | 2000 | 2000 | 4000 | 4000 | 4000 | 6000 | 8000 |
| 2008 | 22 | 2000 | 2000 | 4000 | 4000 | 4000 | 6000 | 6000 |

In HD and PD centres, the median requirement of blood transfusion has remained at around 16% over the last 3 years. (Table 7.1.7 – 7.1.8)

Table 7.1.7: Variation in use of blood transfusion (% patients) among HD centres, 2008

| Year | No of centres | Min | 5th centile | LQ | Median | UQ | 95th centile | Max |
|------|---------------|-----|-------------|-----|--------|------|--------------|-----|
| 1999 | 76 | 0 | 0 | 4 | 10.5 | 21 | 41 | 55 |
| 2000 | 108 | 0 | 0 | 4.5 | 11 | 21.5 | 48 | 77 |
| 2001 | 127 | 0 | 0 | 5 | 12 | 19 | 36 | 50 |
| 2002 | 152 | 0 | 0 | 2 | 7 | 14.5 | 26 | 67 |
| 2003 | 180 | 0 | 0 | 3 | 9 | 19 | 36 | 63 |
| 2004 | 210 | 0 | 0 | 2 | 8 | 16 | 36 | 50 |
| 2005 | 239 | 0 | 0 | 5 | 11 | 20 | 41 | 75 |
| 2006 | 293 | 0 | 2 | 10 | 18 | 29 | 50 | 88 |
| 2007 | 312 | 0 | 0 | 8 | 15 | 23.5 | 43 | 100 |
| 2008 | 357 | 0 | 0 | 8 | 16 | 26 | 47 | 100 |

Figure 7.1.7: Variation in use of blood transfusion (% patients) among HD centres, 2008

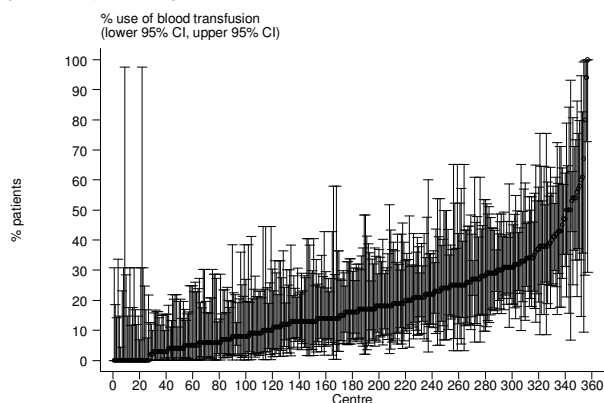


Figure 7.1.8: Variation in use of blood transfusion (% patients) among PD centres, 2008

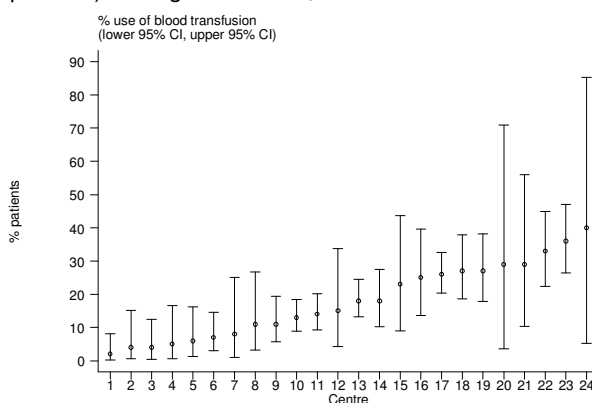


Table 7.1.8: Variation in use of blood transfusion (% patients) among PD centres, 2008

| Year | No of centres | Min | 5th centile | LQ | Median | UQ | 95th centile | Max |
|------|---------------|-----|-------------|-----|--------|------|--------------|-----|
| 1999 | 10 | 0 | 0 | 0 | 6.5 | 23 | 47 | 47 |
| 2000 | 11 | 0 | 0 | 0 | 8 | 17 | 42 | 42 |
| 2001 | 12 | 0 | 0 | 0 | 3.5 | 15.5 | 37 | 37 |
| 2002 | 15 | 0 | 0 | 5 | 8 | 21 | 42 | 42 |
| 2003 | 19 | 0 | 0 | 3 | 12 | 21 | 59 | 59 |
| 2004 | 19 | 0 | 0 | 5 | 15 | 20 | 37 | 37 |
| 2005 | 20 | 0 | 0 | 3.5 | 10.5 | 17 | 43 | 45 |
| 2006 | 22 | 0 | 4 | 9 | 16 | 27 | 36 | 50 |
| 2007 | 24 | 6 | 6 | 11 | 18 | 23 | 36 | 38 |
| 2008 | 24 | 2 | 4 | 7.5 | 16.5 | 27 | 36 | 40 |

SECTION 7.2: IRON STATUS ON DIALYSIS

In HD and PD patients with or without EPO, the mean and median serum Ferritin has remained stable over the years – 400 to 700 ng/ml. Up to 86 % of patients have serum ferritin of >200 ng/ml and 56% that is >500 ng/ml. About 27% of patients have ferritin >800ng/ml. Generally PD patients have higher ferritin levels compared to HD patients. (Table 7.2.1 – 7.2.4)

Table 7.2.1: Distribution of Serum Ferritin without Erythropoietin, HD patients 1999-2008

| Year | No of subjects | Mean | Std_Dev | Median | LQ | UQ | % Patients ≥100 ng/ml |
|------|----------------|-------|---------|--------|-------|-------|-----------------------|
| 1999 | 337 | 517.9 | 424.3 | 402.8 | 162.8 | 809.5 | 86 |
| 2000 | 572 | 486.7 | 416.8 | 362.3 | 151.3 | 741 | 83 |
| 2001 | 761 | 537.2 | 453.6 | 382 | 172 | 828 | 87 |
| 2002 | 804 | 519.6 | 447 | 373.5 | 168.8 | 780.5 | 85 |
| 2003 | 922 | 552.6 | 433.8 | 458 | 192 | 828.9 | 87 |
| 2004 | 1048 | 591.6 | 463.9 | 473.8 | 218.6 | 911.8 | 89 |
| 2005 | 1029 | 618 | 496.6 | 487 | 225.5 | 902 | 90 |
| 2006 | 1224 | 570.1 | 484.3 | 425.7 | 201.3 | 823.5 | 87 |
| 2007 | 1253 | 591.4 | 501 | 443.4 | 200 | 867 | 87 |
| 2008 | 1209 | 578.5 | 487.1 | 434 | 198.5 | 838 | 88 |

Figure 7.2.1: Cumulative Distribution of Serum Ferritin without Erythropoietin, HD patients 1999-2008

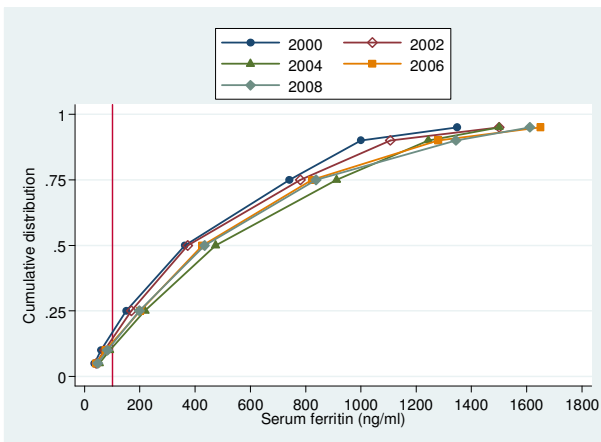


Figure 7.2.2: Distribution of Serum Ferritin without Erythropoietin, PD patients 1999-2008

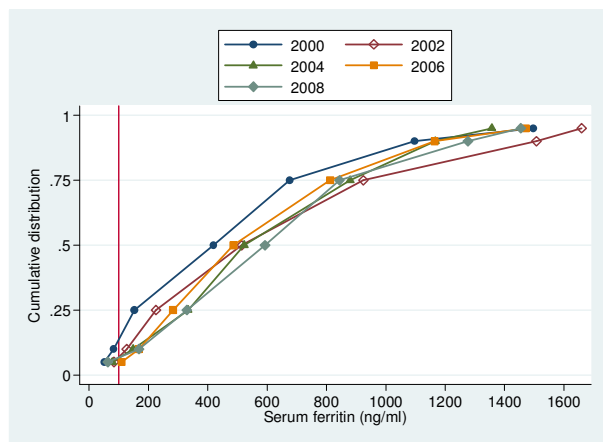


Table 7.2.2: Distribution of Serum Ferritin without Erythropoietin, PD patients 1999-2008

| Year | No of subjects | Mean | Std_Dev | Median | LQ | UQ | % Patients ≥100 ng/ml |
|------|----------------|-------|---------|--------|-------|-------|-----------------------|
| 1999 | 124 | 553.7 | 400.1 | 499.3 | 255.3 | 686.8 | 94 |
| 2000 | 144 | 505.9 | 433.8 | 420 | 152.3 | 675.5 | 88 |
| 2001 | 223 | 543.8 | 417.5 | 440 | 216.9 | 754 | 91 |
| 2002 | 236 | 634.8 | 491.2 | 514.9 | 226 | 924.6 | 93 |
| 2003 | 329 | 602.5 | 429.2 | 503.7 | 269 | 834 | 93 |
| 2004 | 304 | 608.4 | 385 | 522.9 | 333.5 | 879.7 | 94 |
| 2005 | 227 | 647.3 | 398.5 | 597.3 | 320.5 | 913.3 | 96 |
| 2006 | 269 | 589.5 | 408 | 486.1 | 283 | 812.5 | 96 |
| 2007 | 318 | 637.6 | 394.4 | 586.8 | 343 | 841.8 | 97 |
| 2008 | 342 | 636.2 | 409.3 | 592.4 | 329.4 | 844.3 | 94 |

Table 7.2.3: Distribution of Serum Ferritin on Erythropoietin, HD patients 1999-2008

| Year | No of subjects | Mean | Std_Dev | Median | LQ | UQ | % Patients ≥ 100 ng/ml |
|------|----------------|-------|---------|--------|-------|-------|-----------------------------|
| 1999 | 586 | 560.4 | 418.6 | 453 | 225 | 829 | 93 |
| 2000 | 1173 | 588.7 | 456.5 | 476 | 219 | 860 | 91 |
| 2001 | 1634 | 597.8 | 444.2 | 491.1 | 236 | 894.2 | 91 |
| 2002 | 2223 | 593.1 | 459.5 | 464.5 | 231 | 879 | 91 |
| 2003 | 3128 | 640.6 | 428.3 | 562.8 | 298 | 930.5 | 94 |
| 2004 | 3898 | 669.6 | 460.4 | 571 | 306 | 976 | 94 |
| 2005 | 5097 | 683.1 | 471.3 | 599.5 | 316 | 971.5 | 93 |
| 2006 | 6710 | 639.5 | 459.2 | 542.5 | 290 | 880.4 | 93 |
| 2007 | 7961 | 658.6 | 451.8 | 564 | 315.7 | 914 | 94 |
| 2008 | 9875 | 703.6 | 469.5 | 611 | 337.5 | 979.2 | 95 |

Figure 7.2.3: Cumulative distribution of Serum Ferritin on Erythropoietin, HD patients 1999-2008

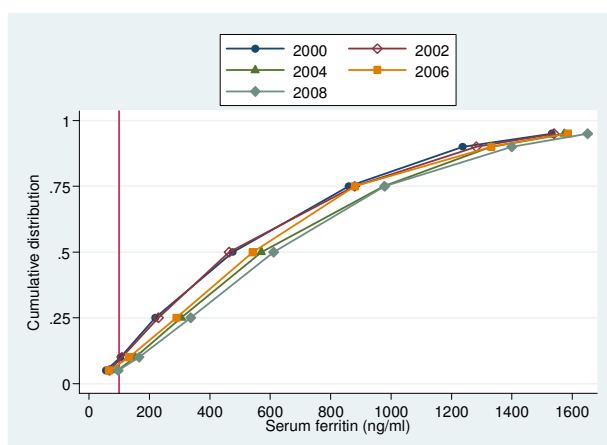


Figure 7.2.4: Cumulative distribution of Serum Ferritin on Erythropoietin, PD patients 1999-2008

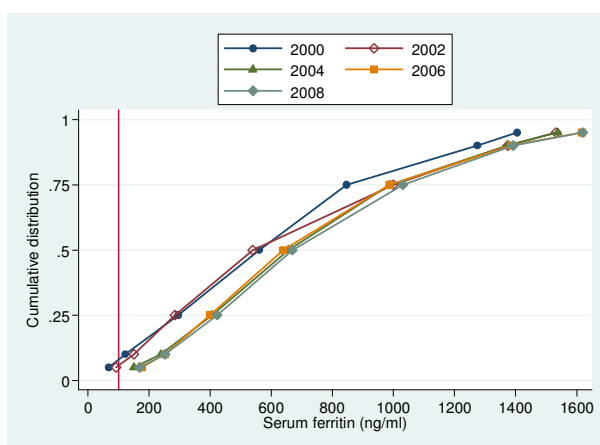


Table 7.2.4: Distribution of Serum Ferritin on Erythropoietin, PD patients 1999-2008

| Year | No of subjects | Mean | Std_Dev | Median | LQ | UQ | % Patients ≥ 100 ng/ml |
|------|----------------|-------|---------|--------|-------|--------|-----------------------------|
| 1999 | 136 | 604.8 | 436.3 | 540.6 | 264.6 | 870.1 | 93 |
| 2000 | 180 | 608.2 | 416.7 | 560 | 295.2 | 846.3 | 92 |
| 2001 | 261 | 645.9 | 449.2 | 557.5 | 275.7 | 885.4 | 93 |
| 2002 | 345 | 666.8 | 462.4 | 538.5 | 284 | 999.5 | 94 |
| 2003 | 517 | 689.9 | 459.9 | 589 | 304 | 993.2 | 96 |
| 2004 | 539 | 729 | 427.5 | 656.2 | 405.5 | 987.4 | 98 |
| 2005 | 765 | 734.3 | 433.2 | 660.5 | 406.5 | 997.5 | 97 |
| 2006 | 882 | 730.9 | 436.6 | 639 | 398.2 | 986.9 | 98 |
| 2007 | 1078 | 742.4 | 426.9 | 651.8 | 425.8 | 1017.7 | 98 |
| 2008 | 1306 | 758.2 | 445.8 | 668.6 | 422.1 | 1030.3 | 98 |

The median transferrin saturation has remained the same over the last decade, with the mean and median always greater than 30%. Up to 91% of all patients have transferrin saturation greater than 20% (Table 7.2.5 – 7.2.8)

Table 7.2.5: Distribution of transferrin saturation without Erythropoietin, HD patients, 1999-2008

| Year | No of subjects | Mean | Std_Dev | Median | LQ | UQ | % Patients $\geq 20\%$ |
|------|----------------|------|---------|--------|------|------|------------------------|
| 1999 | 654 | 32.9 | 16.3 | 29.9 | 20.9 | 42.4 | 78 |
| 2000 | 801 | 32.7 | 16.9 | 28.6 | 20.9 | 41.3 | 78 |
| 2001 | 839 | 36.8 | 18.5 | 32.3 | 23.8 | 45.7 | 84 |
| 2002 | 811 | 36.5 | 18.9 | 32 | 22.9 | 45.7 | 83 |
| 2003 | 925 | 40.3 | 18.6 | 36 | 27.2 | 51.1 | 91 |
| 2004 | 1035 | 41.2 | 18.1 | 37.5 | 28.5 | 50.1 | 92 |
| 2005 | 1125 | 37.8 | 17.7 | 34.5 | 25.7 | 46.4 | 87 |
| 2006 | 1209 | 36.2 | 16.9 | 32.9 | 24.7 | 44.1 | 87 |
| 2007 | 1285 | 36.1 | 16.5 | 32.5 | 24.8 | 43.7 | 87 |
| 2008 | 1233 | 34.2 | 15.4 | 31.8 | 23.7 | 41.3 | 85 |

Figure 7.2.5: Cumulative distribution of transferrin saturation without Erythropoietin, HD patients 1999-2008

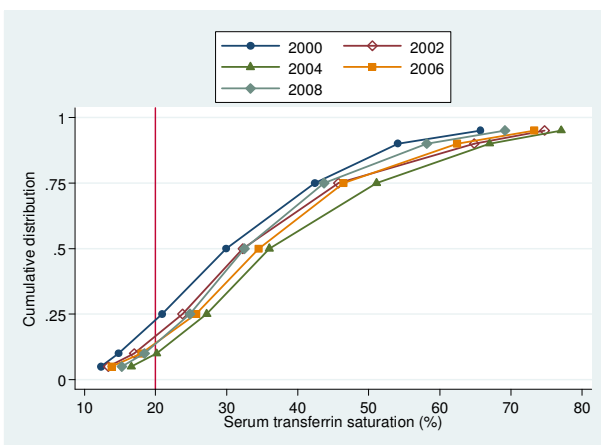


Figure 7.2.6: Cumulative distribution of transferrin saturation without Erythropoietin, PD patients 1999-2008

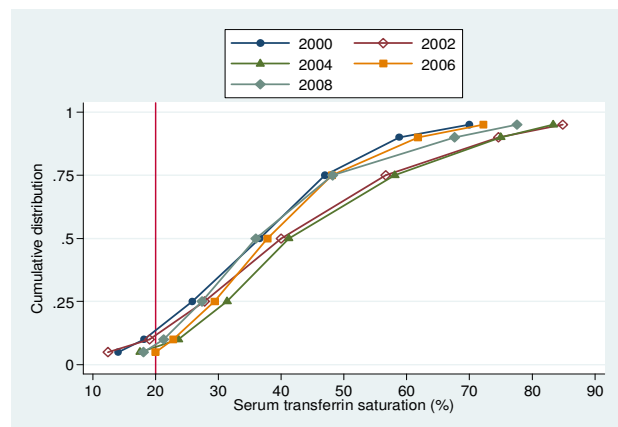


Table 7.2.6: Distribution of transferrin saturation without Erythropoietin, PD patients, 1999-2008

| Year | No of subjects | Mean | Std_Dev | Median | LQ | UQ | % Patients $\geq 20\%$ |
|------|----------------|------|---------|--------|------|------|------------------------|
| 1999 | 194 | 37.7 | 16.2 | 36.6 | 25.9 | 47 | 88 |
| 2000 | 237 | 37.9 | 18.5 | 34.2 | 25 | 48 | 86 |
| 2001 | 279 | 43.2 | 20.8 | 40 | 27.8 | 56.7 | 89 |
| 2002 | 332 | 42.7 | 19.1 | 38.1 | 28.3 | 54.5 | 92 |
| 2003 | 397 | 45.2 | 19.7 | 41.2 | 31.4 | 58.1 | 93 |
| 2004 | 380 | 44.5 | 18.1 | 41.6 | 30.9 | 55.3 | 98 |
| 2005 | 288 | 40.6 | 16.2 | 37.8 | 29.4 | 48.1 | 95 |
| 2006 | 310 | 40.4 | 17.3 | 37.9 | 27.1 | 46.8 | 95 |
| 2007 | 359 | 40.1 | 18 | 36 | 27.4 | 48.2 | 92 |
| 2008 | 353 | 38.2 | 17.7 | 34.3 | 26.2 | 44.4 | 91 |

Table 7.2.7: Distribution of Transferrin saturation on Erythropoietin, HD patients, 1999-2008

| Year | No of subjects | Mean | Std_Dev | Median | LQ | UQ | % Patients ≥ 20 % |
|------|----------------|------|---------|--------|------|------|------------------------|
| 1999 | 703 | 34.5 | 16 | 31.6 | 23.2 | 42 | 85 |
| 2000 | 1246 | 34.9 | 16.7 | 30.4 | 23 | 44 | 84 |
| 2001 | 1631 | 36.2 | 17.9 | 32.4 | 23.6 | 45.1 | 84 |
| 2002 | 1995 | 34.6 | 17.6 | 30.6 | 22.2 | 43.6 | 81 |
| 2003 | 2638 | 39.6 | 18.4 | 36 | 26.6 | 48.9 | 90 |
| 2004 | 3265 | 39.6 | 17 | 36.1 | 27.7 | 48.1 | 93 |
| 2005 | 4789 | 36.6 | 17.3 | 32.8 | 24.6 | 45 | 87 |
| 2006 | 6324 | 35.1 | 16.4 | 31.6 | 24.1 | 42.1 | 87 |
| 2007 | 7525 | 34.7 | 15.4 | 31.6 | 24.4 | 41.5 | 88 |
| 2008 | 9504 | 34.7 | 15.4 | 31.5 | 24 | 41.6 | 87 |

Figure 7.2.7: Cumulative distribution of transferrin saturation on Erythropoietin, HD patients 1999-2008

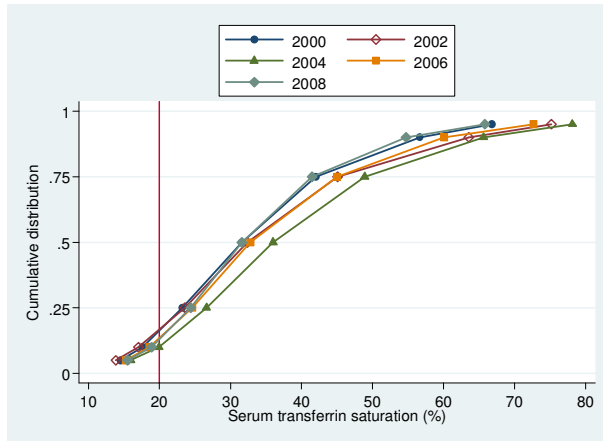


Figure 7.2.8: Cumulative distribution of transferrin saturation on Erythropoietin, PD patients 1999-2008

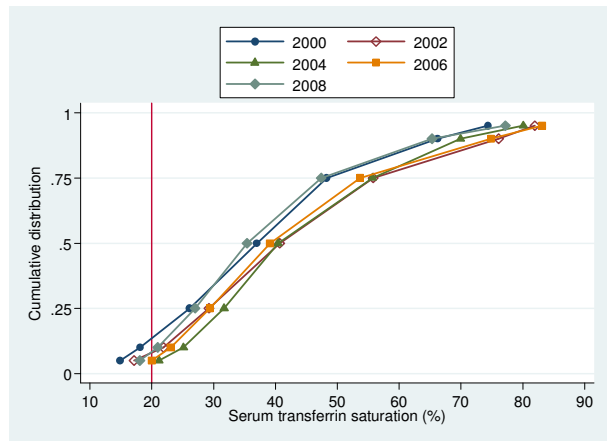


Table 7.2.8: Distribution of Transferrin saturation on Erythropoietin, PD patients, 1999-2008

| Year | No of subjects | Mean | Std_Dev | Median | LQ | UQ | % Patients ≥ 20 % |
|------|----------------|------|---------|--------|------|------|------------------------|
| 1999 | 137 | 38.9 | 17 | 37 | 26.1 | 48.3 | 86 |
| 2000 | 238 | 38.9 | 18.7 | 36 | 24.5 | 51.1 | 86 |
| 2001 | 292 | 44.1 | 19.6 | 40.7 | 29.2 | 55.8 | 94 |
| 2002 | 363 | 43.6 | 18.6 | 39.7 | 30 | 54.3 | 94 |
| 2003 | 460 | 44.6 | 17.8 | 40.4 | 31.7 | 55.7 | 96 |
| 2004 | 696 | 44.7 | 18.7 | 40.8 | 30.8 | 54.5 | 96 |
| 2005 | 819 | 43.5 | 19.3 | 39.1 | 29.4 | 53.7 | 95 |
| 2006 | 905 | 41.7 | 17.5 | 38 | 29.4 | 50.7 | 95 |
| 2007 | 1069 | 39.3 | 17.6 | 35.4 | 27 | 47.4 | 92 |
| 2008 | 1261 | 38.6 | 17.9 | 34.4 | 26.2 | 47.1 | 90 |

From 1999 to 2008, the median for serum ferritin for all HD centres had increased from 400 to 600 ng/ml. There was a wide variation in median serum ferritin levels ranging from 295 to 941 ng/ml between HD centres in 2008. At the median, 96% of patients on EPO have a serum ferritin greater 100 ng/ml.

The median transferrin saturation of HD centres has been > 30% over the last 10 years. 89% of HD centres have patients with transferrin saturation greater than 20%. (Table 7.2.9)

A similar trend, but with higher level of ferritin and transferrin saturation was seen in the PD centres. (Table 7.2.10)

Table 7.2.9: Variation in iron status outcomes among HD centres, 2008

a) medium serum ferritin among patients on erythropoietin

| Year | No of centres | Min | 5th centile | LQ | Median | UQ | 95th centile | Max |
|------|---------------|-------|-------------|-------|--------|-------|--------------|--------|
| 1999 | 22 | 169 | 189.5 | 354.5 | 406.9 | 524.5 | 890.1 | 945.3 |
| 2000 | 42 | 165 | 235.5 | 373 | 559 | 682 | 813.5 | 1087.5 |
| 2001 | 51 | 213.8 | 239.3 | 385 | 508 | 696.5 | 886.5 | 1191.3 |
| 2002 | 69 | 106.6 | 192 | 367 | 470 | 608.5 | 828 | 1070.8 |
| 2003 | 100 | 152.5 | 294.3 | 460.4 | 549.5 | 697.3 | 973.6 | 1742.8 |
| 2004 | 125 | 99.5 | 329.8 | 463.1 | 570 | 716.3 | 1000 | 2000 |
| 2005 | 163 | 1.6 | 258.5 | 459.3 | 616.3 | 725.4 | 920 | 2000 |
| 2006 | 210 | 1.5 | 234.5 | 414 | 555.8 | 682.5 | 875.5 | 2000 |
| 2007 | 237 | 85.5 | 250.5 | 427 | 563 | 689.8 | 880.5 | 1389.5 |
| 2008 | 275 | 82.4 | 294.7 | 475 | 599 | 719.3 | 941 | 2000 |

Figure 7.2.9(a): Variation in medium serum ferritin among patients on erythropoietin, HD centres 2008

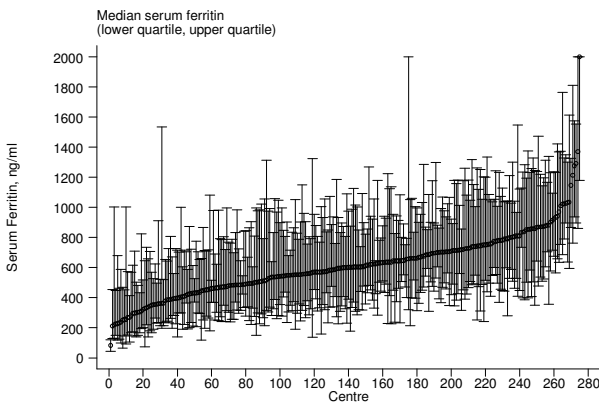
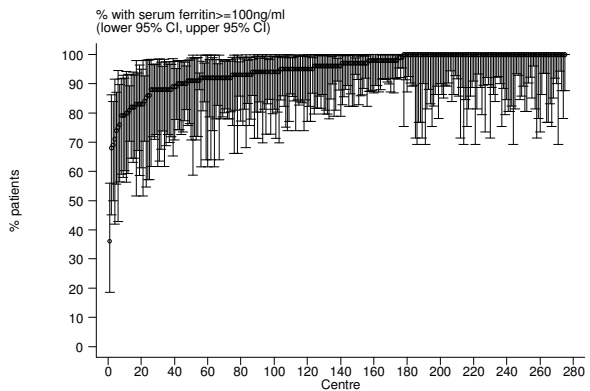


Figure 7.2.9(b): Variation in proportion of patients on erythropoietin with serum ferritin ≥ 100 ng/ml, HD centres 2008



b) Proportion of patients on erythropoietin with serum ferritin ≥ 100 ng/ml, HD centres

| Year | No of centres | Min | 5th centile | LQ | Median | UQ | 95th centile | Max |
|------|---------------|-----|-------------|------|--------|-----|--------------|-----|
| 1999 | 22 | 70 | 76 | 92 | 96 | 100 | 100 | 100 |
| 2000 | 42 | 68 | 73 | 88 | 93 | 97 | 100 | 100 |
| 2001 | 51 | 67 | 73 | 86 | 93 | 97 | 100 | 100 |
| 2002 | 69 | 55 | 73 | 89 | 93 | 96 | 100 | 100 |
| 2003 | 100 | 57 | 76 | 90.5 | 96 | 100 | 100 | 100 |
| 2004 | 125 | 50 | 85 | 92 | 96 | 100 | 100 | 100 |
| 2005 | 163 | 5 | 79 | 90 | 95 | 100 | 100 | 100 |
| 2006 | 210 | 0 | 73 | 91 | 95 | 100 | 100 | 100 |
| 2007 | 237 | 43 | 77 | 91 | 96 | 100 | 100 | 100 |
| 2008 | 275 | 36 | 82 | 92 | 96 | 100 | 100 | 100 |

c) Median transferrin saturation among patients on erythropoietin, HD centres

| Year | No of centres | Min | 5th centile | LQ | Median | UQ | 95th centile | Max |
|------|---------------|------|-------------|------|--------|------|--------------|------|
| 1999 | 26 | 16.4 | 20.7 | 26.9 | 31.5 | 34.3 | 44.8 | 44.8 |
| 2000 | 43 | 16 | 23.2 | 27.9 | 31.3 | 37.1 | 44.1 | 57.5 |
| 2001 | 55 | 21 | 22.5 | 27.1 | 31 | 37 | 48.4 | 76.1 |
| 2002 | 61 | 14.7 | 21 | 26 | 29.7 | 36.5 | 51.1 | 60.2 |
| 2003 | 90 | 18.2 | 24.2 | 31.3 | 34.2 | 41.2 | 57.3 | 70.7 |
| 2004 | 112 | 22.7 | 26.4 | 32.6 | 36.1 | 41.5 | 52 | 67.6 |
| 2005 | 149 | 15.2 | 24.1 | 29.2 | 32.4 | 38.3 | 47.7 | 69.8 |
| 2006 | 186 | 13.7 | 22.9 | 27.5 | 31.5 | 35.4 | 45 | 78.7 |
| 2007 | 213 | 17.6 | 21.8 | 28 | 31.4 | 35.2 | 44 | 77.8 |
| 2008 | 261 | 14.8 | 23.5 | 28 | 31.5 | 34.4 | 46.5 | 76.8 |

Figure 7.2.9(c): Variation in median transferrin saturation among patients on erythropoietin HD centres, 2008

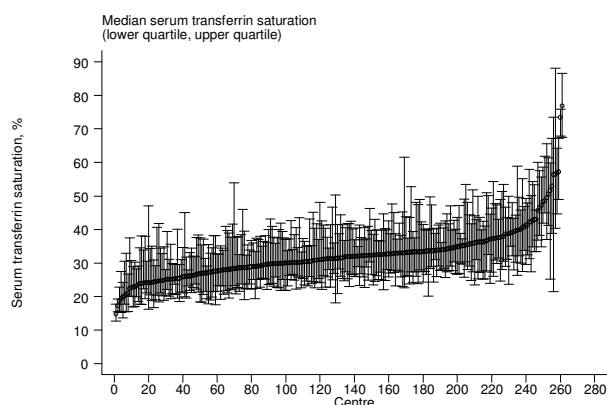
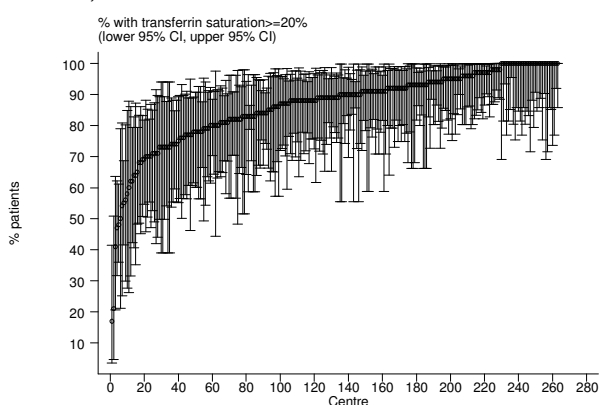


Figure 7.2.9(d): Variation in proportion of patients on erythropoietin with transferrin saturation $\geq 20\%$, HD centres, 2008



d) Proportion of patients on erythropoietin with transferrin saturation $\geq 20\%$, HD centres

| Year | No of centres | Min | 5th centile | LQ | Median | UQ | 95th centile | Max |
|------|---------------|-----|-------------|----|--------|-----|--------------|-----|
| 1999 | 26 | 30 | 57 | 83 | 86.5 | 94 | 100 | 100 |
| 2000 | 43 | 20 | 60 | 77 | 86 | 94 | 100 | 100 |
| 2001 | 55 | 53 | 59 | 75 | 88 | 95 | 100 | 100 |
| 2002 | 61 | 33 | 56 | 72 | 82 | 91 | 100 | 100 |
| 2003 | 90 | 45 | 70 | 86 | 92.5 | 100 | 100 | 100 |
| 2004 | 112 | 55 | 70 | 90 | 94 | 100 | 100 | 100 |
| 2005 | 150 | 30 | 71 | 83 | 91 | 95 | 100 | 100 |
| 2006 | 186 | 20 | 59 | 81 | 90 | 95 | 100 | 100 |
| 2007 | 214 | 27 | 60 | 83 | 91 | 96 | 100 | 100 |
| 2008 | 263 | 17 | 64 | 81 | 89 | 95 | 100 | 100 |

Table 7.2.10: Variation in iron status outcomes among PD centres, 2008

a) Medium serum ferritin among patients on erythropoietin

| Year | No of centres | Min | 5th centile | LQ | Median | UQ | 95th centile | Max |
|------|---------------|-------|-------------|-------|--------|-------|--------------|--------|
| 1999 | 5 | 302.8 | 302.8 | 343.4 | 470 | 491.5 | 719.5 | 719.5 |
| 2000 | 6 | 335 | 335 | 437.3 | 632.6 | 770 | 773 | 773 |
| 2001 | 9 | 285.8 | 285.8 | 532.8 | 550.7 | 617.5 | 908 | 908 |
| 2002 | 10 | 372.2 | 372.2 | 437.4 | 477 | 606.5 | 826.5 | 826.5 |
| 2003 | 12 | 304 | 304 | 454.5 | 508.5 | 716.1 | 954.9 | 954.9 |
| 2004 | 13 | 317 | 317 | 529.5 | 610 | 706.5 | 860.3 | 860.3 |
| 2005 | 17 | 338.5 | 338.5 | 555.5 | 710 | 800.9 | 843 | 843 |
| 2006 | 19 | 399.9 | 399.9 | 535.3 | 634.6 | 787.4 | 968.4 | 968.4 |
| 2007 | 20 | 283.3 | 340.7 | 592.8 | 665 | 730.7 | 1005.1 | 1048.6 |
| 2008 | 21 | 211.3 | 385 | 495 | 658.9 | 697 | 970.1 | 979 |

Figure 7.2.10(a): Variation in medium serum ferritin among patients on erythropoietin, PD centres 2008

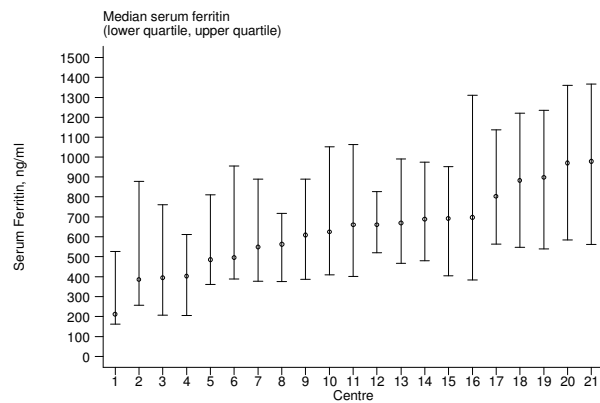
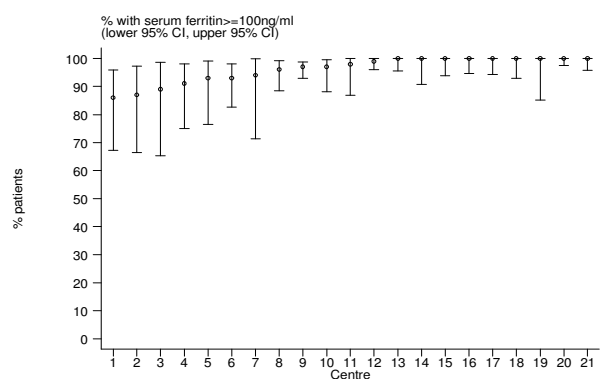


Figure 7.2.10(b): Variation in proportion of patients on erythropoietin with serum ferritin ≥ 100 ng/ml, PD centres 2008



b) Proportion of patients on erythropoietin with serum ferritin ≥ 100 ng/ml, PD centres

| Year | No of centres | Min | 5th centile | LQ | Median | UQ | 95th centile | Max |
|------|---------------|-----|-------------|----|--------|-----|--------------|-----|
| 1999 | 5 | 85 | 85 | 92 | 95 | 100 | 100 | 100 |
| 2000 | 6 | 87 | 87 | 88 | 93 | 100 | 100 | 100 |
| 2001 | 9 | 80 | 80 | 85 | 94 | 100 | 100 | 100 |
| 2002 | 10 | 91 | 91 | 92 | 94.5 | 100 | 100 | 100 |
| 2003 | 12 | 85 | 85 | 95 | 96 | 98 | 100 | 100 |
| 2004 | 13 | 93 | 93 | 95 | 100 | 100 | 100 | 100 |
| 2005 | 17 | 86 | 86 | 96 | 97 | 100 | 100 | 100 |
| 2006 | 19 | 95 | 95 | 97 | 100 | 100 | 100 | 100 |
| 2007 | 20 | 86 | 88.5 | 96 | 98 | 100 | 100 | 100 |
| 2008 | 21 | 86 | 87 | 93 | 98 | 100 | 100 | 100 |

c) Median transferrin saturation among patients on erythropoietin, PD centres

| Year | No of centres | Min | 5th centile | LQ | Median | UQ | 95th centile | Max |
|------|---------------|------|-------------|------|--------|------|--------------|------|
| 1999 | 6 | 24 | 24 | 27.2 | 33.6 | 39.4 | 42.4 | 42.4 |
| 2000 | 6 | 23.1 | 23.1 | 26.5 | 36.3 | 37.6 | 52.5 | 52.5 |
| 2001 | 8 | 28.4 | 28.4 | 31.9 | 36.9 | 47.5 | 79.8 | 79.8 |
| 2002 | 9 | 30.5 | 30.5 | 36.5 | 38.6 | 40.3 | 60.4 | 60.4 |
| 2003 | 13 | 31.9 | 31.9 | 35.8 | 41.5 | 47.5 | 64 | 64 |
| 2004 | 17 | 29.1 | 29.1 | 36 | 40.9 | 43.6 | 82.3 | 82.3 |
| 2005 | 17 | 30.3 | 30.3 | 35.6 | 38.5 | 43 | 74.9 | 74.9 |
| 2006 | 19 | 31.9 | 31.9 | 33.9 | 37.7 | 40.5 | 75.8 | 75.8 |
| 2007 | 19 | 25.9 | 25.9 | 29.6 | 37.7 | 45.7 | 83.2 | 83.2 |
| 2008 | 19 | 25.4 | 25.4 | 31.6 | 34.6 | 41 | 81.2 | 81.2 |

Figure 7.2.10 (c): Variation in median transferrin saturation among patients on erythropoietin, PD centres 2008

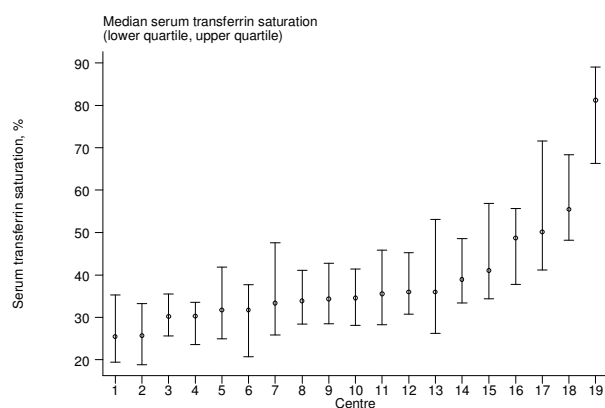
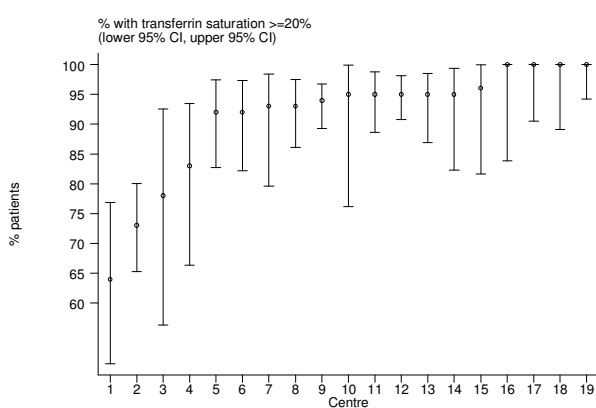


Figure 7.2.10 (d): Variation in proportion of patients on erythropoietin with transferrin saturation $\geq 20\%$, PD centres 2008



d) Proportion of patients on erythropoietin with transferrin saturation $\geq 20\%$, PD centres

| Year | No of centres | Min | 5th centile | LQ | Median | UQ | 95th centile | Max |
|------|---------------|-----|-------------|----|--------|------|--------------|-----|
| 1999 | 6 | 53 | 53 | 84 | 87.5 | 94 | 100 | 100 |
| 2000 | 6 | 68 | 68 | 74 | 90 | 100 | 100 | 100 |
| 2001 | 8 | 85 | 85 | 92 | 93.5 | 95.5 | 97 | 97 |
| 2002 | 9 | 78 | 78 | 92 | 93 | 98 | 100 | 100 |
| 2003 | 13 | 90 | 90 | 95 | 96 | 100 | 100 | 100 |
| 2004 | 17 | 88 | 88 | 95 | 97 | 100 | 100 | 100 |
| 2005 | 17 | 88 | 88 | 94 | 97 | 100 | 100 | 100 |
| 2006 | 19 | 83 | 83 | 93 | 95 | 98 | 100 | 100 |
| 2007 | 19 | 73 | 73 | 88 | 94 | 98 | 100 | 100 |
| 2008 | 19 | 64 | 64 | 92 | 95 | 96 | 100 | 100 |

SECTION 7.3: HAEMOGLOBIN OUTCOMES ON DIALYSIS

The mean and median haemoglobin concentrations in all dialysis patients with or without EPO were steadily increasing; in 2008 the mean and median haemoglobin ranged from 10.2 to 11.1g/dl. The percentage of patients with haemoglobin > 10 or > 11 gm/dl steadily increased for patients with or without EPO. (Table 7.3.1 – 7.3.4)

Table 7.3.1: Distribution of Haemoglobin Concentration without Erythropoietin, HD patients 1999-2008

| Year | No of subject | Mean | Std Dev | Median | LQ | UQ | % Patients ≤10g/dL | % Patients >10g/dL | % Patients ≤11g/dL | % Patients >11g/dL |
|------|---------------|------|---------|--------|-----|------|--------------------|--------------------|--------------------|--------------------|
| 1999 | 1400 | 9.1 | 1.9 | 8.9 | 7.8 | 10.3 | 70 | 30 | 85 | 15 |
| 2000 | 1755 | 9.4 | 2.1 | 9.1 | 7.9 | 10.6 | 67 | 33 | 80 | 20 |
| 2001 | 1812 | 9.4 | 1.9 | 9.3 | 8 | 10.6 | 64 | 36 | 81 | 19 |
| 2002 | 1796 | 9.6 | 2.1 | 9.4 | 8.1 | 10.9 | 62 | 38 | 76 | 24 |
| 2003 | 1810 | 9.7 | 2.1 | 9.5 | 8.3 | 11 | 60 | 40 | 76 | 24 |
| 2004 | 1932 | 10.1 | 2.1 | 9.9 | 8.6 | 11.5 | 53 | 47 | 68 | 32 |
| 2005 | 1695 | 10.5 | 2.3 | 10.3 | 8.9 | 12 | 46 | 54 | 62 | 38 |
| 2006 | 1839 | 10.6 | 2.2 | 10.4 | 9 | 12.1 | 42 | 58 | 60 | 40 |
| 2007 | 1854 | 10.8 | 2.2 | 10.7 | 9.1 | 12.4 | 40 | 60 | 55 | 45 |
| 2008 | 1770 | 10.8 | 2.3 | 10.8 | 9.1 | 12.5 | 39 | 61 | 54 | 46 |

Figure 7.3.1: Cumulative distribution of haemoglobin concentration without Erythropoietin, HD patients 1999-2008

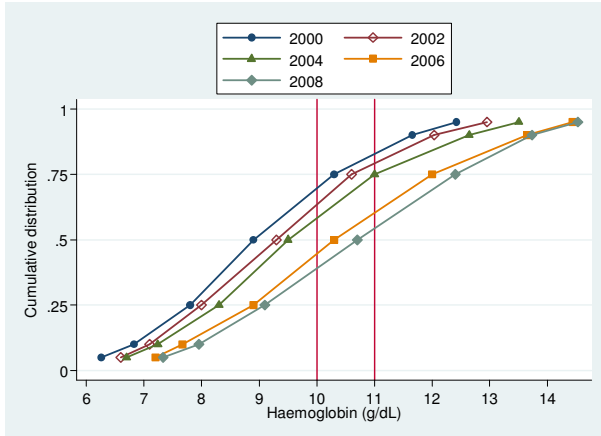


Figure 7.3.2: Cumulative distribution of haemoglobin concentration without Erythropoietin, PD patients 1999-2008

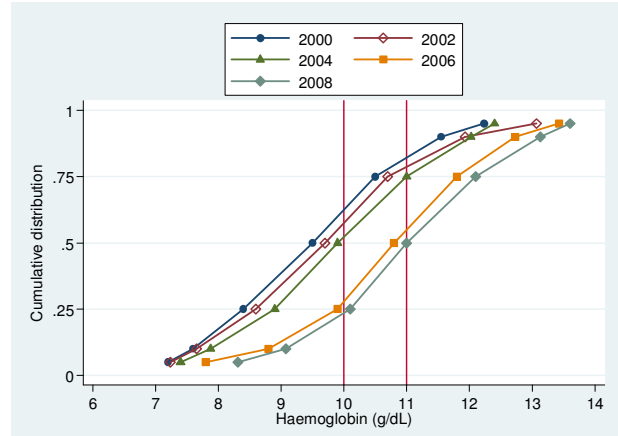


Table 7.3.2: Distribution of Haemoglobin Concentration without Erythropoietin, PD patients 1999-2008

| Year | No of subject | Mean | Std Dev | Median | LQ | UQ | % Patients ≤10g/dL | % Patients >10g/dL | % Patients ≤11g/dL | % Patients >11g/dL |
|------|---------------|------|---------|--------|------|------|--------------------|--------------------|--------------------|--------------------|
| 1999 | 336 | 9.5 | 1.6 | 9.5 | 8.4 | 10.5 | 66 | 34 | 84 | 16 |
| 2000 | 342 | 9.8 | 1.7 | 9.7 | 8.7 | 10.9 | 58 | 42 | 79 | 21 |
| 2001 | 405 | 9.8 | 1.8 | 9.7 | 8.6 | 10.7 | 59 | 41 | 78 | 22 |
| 2002 | 434 | 10 | 1.8 | 9.9 | 8.8 | 11 | 54 | 46 | 76 | 24 |
| 2003 | 542 | 10 | 1.7 | 9.9 | 8.9 | 11 | 52 | 48 | 76 | 24 |
| 2004 | 482 | 10.4 | 1.6 | 10.3 | 9.3 | 11.4 | 43 | 57 | 67 | 33 |
| 2005 | 378 | 10.8 | 1.6 | 10.8 | 9.9 | 11.8 | 28 | 72 | 60 | 40 |
| 2006 | 399 | 10.8 | 1.6 | 10.9 | 9.9 | 11.8 | 26 | 74 | 54 | 46 |
| 2007 | 452 | 11 | 1.6 | 11 | 10.1 | 12.1 | 24 | 76 | 51 | 49 |
| 2008 | 456 | 11.1 | 1.7 | 11.1 | 10.2 | 12.1 | 22 | 78 | 46 | 54 |

Table 7.3.3: Distribution of Haemoglobin Concentration on Erythropoietin, HD patients 1999-2008

| Year | No of subject | Mean | Std Dev | Median | LQ | UQ | % Patients ≤10g/dL | % Patients >10g/dL | % Patients ≤11g/dL | % Patients >11g/dL |
|------|---------------|------|---------|--------|-----|------|--------------------|--------------------|--------------------|--------------------|
| 1999 | 1503 | 9.2 | 1.5 | 9.1 | 8.1 | 10.2 | 71 | 29 | 89 | 11 |
| 2000 | 2331 | 9.4 | 1.7 | 9.4 | 8.3 | 10.5 | 65 | 35 | 85 | 15 |
| 2001 | 3046 | 9.4 | 1.6 | 9.4 | 8.3 | 10.5 | 65 | 35 | 85 | 15 |
| 2002 | 3858 | 9.5 | 1.7 | 9.5 | 8.4 | 10.7 | 62 | 38 | 81 | 19 |
| 2003 | 4774 | 9.6 | 1.6 | 9.6 | 8.5 | 10.7 | 61 | 39 | 81 | 19 |
| 2004 | 5799 | 9.8 | 1.6 | 9.9 | 8.8 | 10.9 | 54 | 46 | 77 | 23 |
| 2005 | 7190 | 10 | 1.6 | 10 | 8.9 | 11.1 | 50 | 50 | 73 | 27 |
| 2006 | 9336 | 10.1 | 1.6 | 10 | 9 | 11.1 | 50 | 50 | 72 | 28 |
| 2007 | 10598 | 10.2 | 1.5 | 10.3 | 9.2 | 11.3 | 44 | 56 | 69 | 31 |
| 2008 | 12897 | 10.2 | 1.5 | 10.3 | 9.1 | 11.3 | 44 | 56 | 69 | 31 |

Figure 7.3.3: Cumulative distribution of Haemoglobin Concentration on Erythropoietin, HD patients 1999-2008

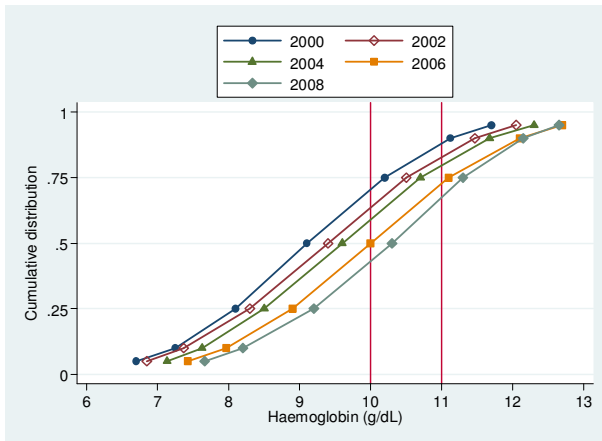


Figure 7.3.4: Cumulative distribution of Haemoglobin Concentration on Erythropoietin, PD patients 1999-2008

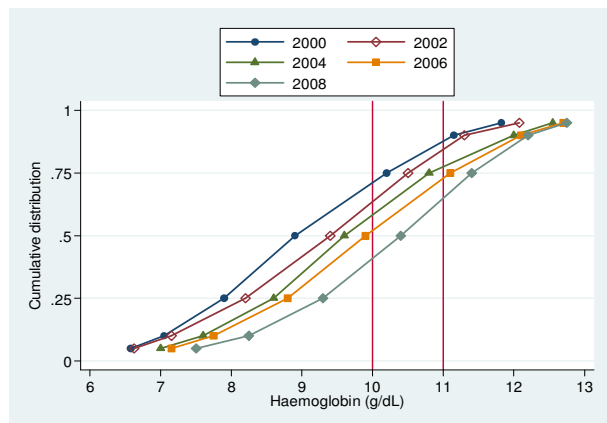


Table 7.3.4: Distribution of Haemoglobin Concentration on Erythropoietin, PD patients 1999-2008

| Year | No of subject | Mean | Std Dev | Median | LQ | UQ | % Patients ≤10g/dL | % Patients >10g/dL | % Patients ≤11g/dL | % Patients >11g/dL |
|------|---------------|------|---------|--------|-----|------|--------------------|--------------------|--------------------|--------------------|
| 1999 | 262 | 9 | 1.6 | 8.9 | 7.9 | 10.2 | 73 | 27 | 89 | 11 |
| 2000 | 299 | 9.4 | 1.7 | 9.2 | 8.1 | 10.6 | 65 | 35 | 82 | 18 |
| 2001 | 345 | 9.3 | 1.6 | 9.4 | 8.2 | 10.5 | 65 | 35 | 86 | 14 |
| 2002 | 432 | 9.4 | 1.6 | 9.3 | 8.4 | 10.4 | 69 | 31 | 83 | 17 |
| 2003 | 639 | 9.7 | 1.7 | 9.6 | 8.6 | 10.8 | 59 | 41 | 78 | 22 |
| 2004 | 797 | 9.8 | 1.7 | 9.8 | 8.6 | 11 | 54 | 46 | 76 | 24 |
| 2005 | 967 | 9.9 | 1.7 | 9.9 | 8.8 | 11.1 | 53 | 47 | 73 | 27 |
| 2006 | 1106 | 10 | 1.6 | 10.1 | 9 | 11 | 49 | 51 | 75 | 25 |
| 2007 | 1303 | 10.3 | 1.6 | 10.4 | 9.3 | 11.4 | 41 | 59 | 66 | 34 |
| 2008 | 1571 | 10.4 | 1.5 | 10.4 | 9.4 | 11.3 | 39 | 61 | 66 | 34 |

In 2008, for HD patients on EPO, the median Hb in HD centres ranged 8.0 to 12.6 gm/dl with the median at 10.2 gm/dl. Similar trend was noted in the PD centres with lesser variation.

In 2008 for HD patients on EPO, the proportion of patients with Hb > 10 gm /dl varied between 0 to 100%, with median at 57%. Similarly for patients with Hb > 11gm/dl, the range was from 0 to 100% with the median at 31%. Lesser variation was seen in the PD patients.

Table 7.3.5: Variation in Haemoglobin outcomes among HD centres 2008

a) Median haemoglobin level among patients on Erythropoietin

| Year | No of centres | Min | 5th centile | LQ | Median | UQ | 95th centile | Max |
|------|---------------|-----|-------------|-----|--------|------|--------------|------|
| 1999 | 52 | 7.7 | 8 | 8.7 | 9.1 | 9.6 | 10.2 | 10.4 |
| 2000 | 75 | 8.1 | 8.2 | 8.8 | 9.3 | 9.7 | 10.5 | 14.6 |
| 2001 | 93 | 8 | 8.3 | 8.9 | 9.5 | 9.9 | 10.6 | 12.2 |
| 2002 | 112 | 8.3 | 8.5 | 9 | 9.5 | 10 | 10.8 | 11.3 |
| 2003 | 143 | 7.8 | 8.5 | 9.1 | 9.6 | 10 | 10.7 | 11.5 |
| 2004 | 175 | 7.8 | 8.6 | 9.2 | 9.7 | 10.2 | 10.9 | 11.3 |
| 2005 | 209 | 8.4 | 8.8 | 9.5 | 10 | 10.5 | 11.1 | 11.7 |
| 2006 | 272 | 7.7 | 8.9 | 9.5 | 10 | 10.5 | 11.3 | 12.8 |
| 2007 | 298 | 8.6 | 9 | 9.8 | 10.2 | 10.6 | 11.3 | 12.8 |
| 2008 | 347 | 8 | 8.9 | 9.8 | 10.2 | 10.7 | 11.4 | 12.6 |

Figure 7.3.5(a): Variation in median haemoglobin level among patients on Erythropoietin, HD centres 2008

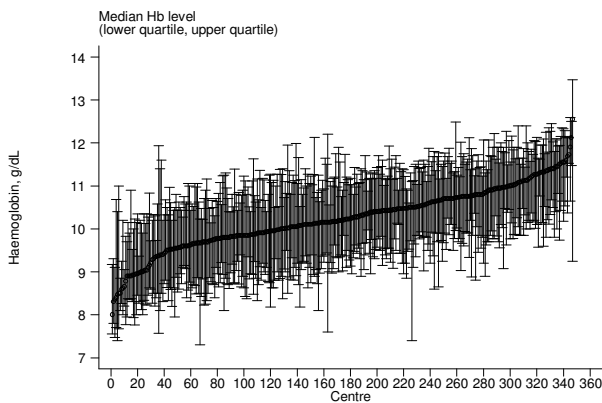
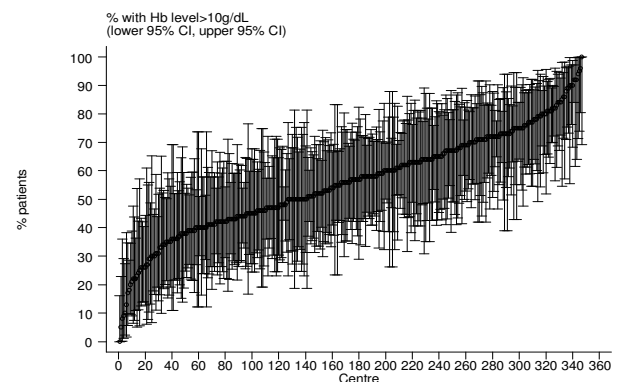


Figure 7.3.5(b): Variation in proportion of patients on erythropoietin with haemoglobin level > 10g/dL, HD centres 2008



b) Proportion of patients on erythropoietin with haemoglobin level > 10g/dL, HD centres

| Year | No of centres | Min | 5th centile | LQ | Median | UQ | 95th centile | Max |
|------|---------------|-----|-------------|------|--------|----|--------------|-----|
| 1999 | 52 | 0 | 4 | 15 | 28.5 | 38 | 59 | 61 |
| 2000 | 75 | 0 | 5 | 20 | 31 | 43 | 61 | 97 |
| 2001 | 93 | 4 | 10 | 24 | 33 | 48 | 69 | 100 |
| 2002 | 112 | 8 | 16 | 27.5 | 36 | 50 | 68 | 86 |
| 2003 | 143 | 0 | 14 | 28 | 36 | 50 | 69 | 100 |
| 2004 | 175 | 8 | 18 | 30 | 41 | 58 | 74 | 85 |
| 2005 | 209 | 0 | 20 | 33 | 49 | 63 | 78 | 100 |
| 2006 | 272 | 0 | 20 | 35.5 | 48 | 64 | 80 | 93 |
| 2007 | 298 | 13 | 24 | 42 | 55 | 68 | 86 | 100 |
| 2008 | 347 | 0 | 26 | 43 | 57 | 69 | 84 | 100 |

c) Proportion of patients on erythropoietin with haemoglobin level > 11g/dL, HD centres

| Year | No of centres | Min | 5th centile | LQ | Median | UQ | 95th centile | Max |
|------|---------------|-----|-------------|----|--------|------|--------------|-----|
| 1999 | 52 | 0 | 0 | 3 | 8 | 15.5 | 29 | 39 |
| 2000 | 75 | 0 | 0 | 6 | 13 | 20 | 32 | 92 |
| 2001 | 93 | 0 | 0 | 8 | 14 | 24 | 38 | 60 |
| 2002 | 112 | 0 | 6 | 12 | 17.5 | 27 | 47 | 71 |
| 2003 | 143 | 0 | 0 | 8 | 15 | 28 | 41 | 59 |
| 2004 | 175 | 0 | 0 | 11 | 19 | 29 | 47 | 58 |
| 2005 | 209 | 0 | 4 | 13 | 24 | 35 | 54 | 75 |
| 2006 | 272 | 0 | 6 | 17 | 25 | 37 | 58 | 75 |
| 2007 | 298 | 0 | 7 | 19 | 28 | 40 | 62 | 92 |
| 2008 | 347 | 0 | 8 | 20 | 31 | 41 | 60 | 100 |

Figure 7.3.5(c): Variation in proportion of patients on erythropoietin with haemoglobin level >11g/dL, HD centres 2008

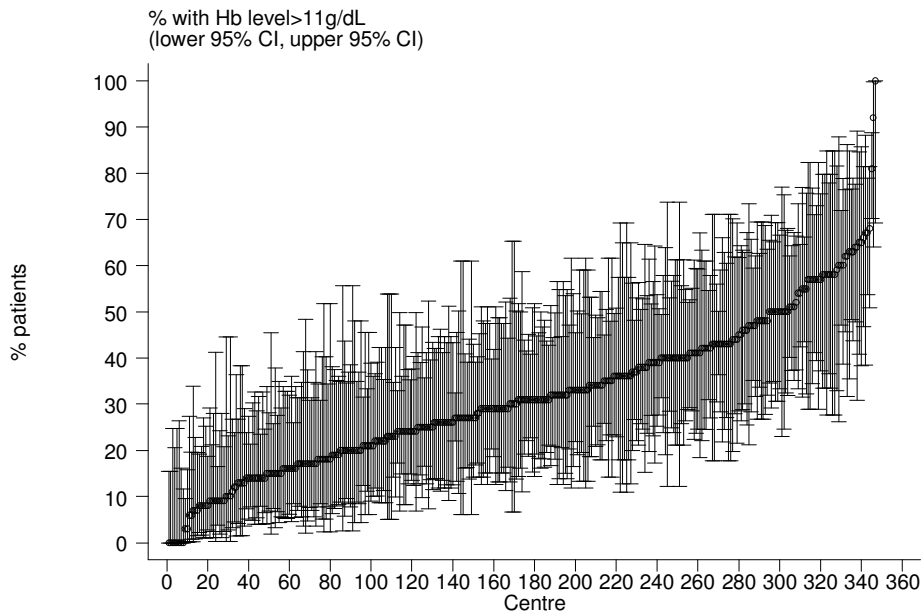


Table 7.3.6: Variation in Haemoglobin outcomes among PD centres 2008

a) Median haemoglobin level among patients on Erythropoietin

| Year | No of centres | Min | 5th centile | LQ | Median | UQ | 95th centile | Max |
|------|---------------|-----|-------------|------|--------|------|--------------|------|
| 1999 | 7 | 8.1 | 8.1 | 8.4 | 8.7 | 9.3 | 9.5 | 9.5 |
| 2000 | 9 | 8.2 | 8.2 | 8.9 | 9 | 9.3 | 10.1 | 10.1 |
| 2001 | 11 | 9 | 9 | 9.2 | 9.4 | 9.6 | 9.7 | 9.7 |
| 2002 | 12 | 8.6 | 8.6 | 9.1 | 9.3 | 9.5 | 9.9 | 9.9 |
| 2003 | 16 | 8.4 | 8.4 | 9.3 | 9.5 | 10 | 11.2 | 11.2 |
| 2004 | 17 | 8.4 | 8.4 | 9.2 | 9.7 | 10.2 | 11.2 | 11.2 |
| 2005 | 18 | 8.9 | 8.9 | 9.5 | 9.9 | 10.3 | 11 | 11 |
| 2006 | 22 | 8.8 | 8.9 | 9.5 | 10 | 10.4 | 10.6 | 10.9 |
| 2007 | 22 | 9.5 | 9.5 | 10.1 | 10.4 | 10.8 | 11.1 | 11.3 |
| 2008 | 22 | 9.2 | 9.6 | 10.1 | 10.4 | 10.8 | 11.1 | 11.2 |

Figure 7.3.6(a): Variation in median haemoglobin level among patients on Erythropoietin, PD centres 2008

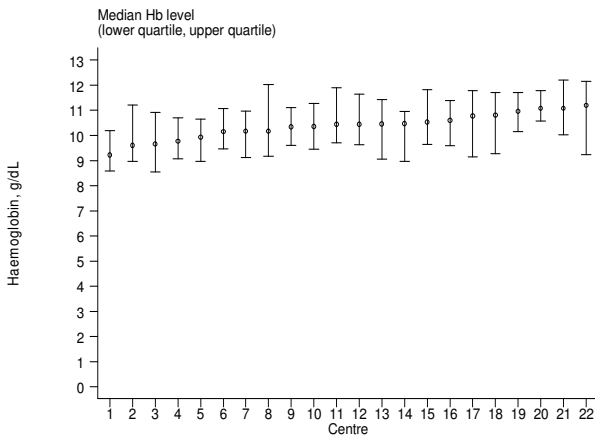
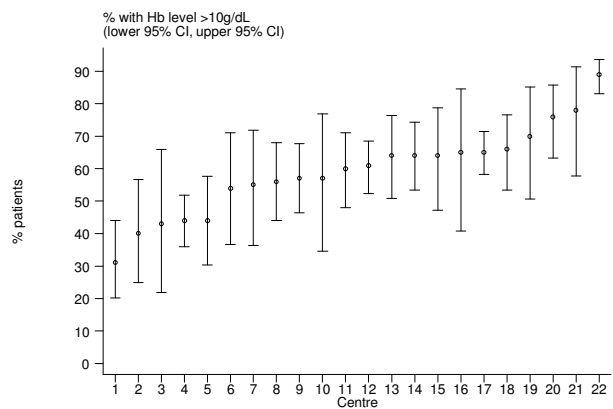


Figure 7.3.6(b): Variation in proportion of patients on erythropoietin with haemoglobin level > 10g/dL, PD centres, 2008



b) Proportion of patients on erythropoietin with haemoglobin level > 10g/dL, PD centres

| Year | No of centres | Min | 5th centile | LQ | Median | UQ | 95th centile | Max |
|------|---------------|-----|-------------|------|--------|------|--------------|-----|
| 1999 | 7 | 7 | 7 | 20 | 25 | 36 | 40 | 40 |
| 2000 | 9 | 19 | 19 | 30 | 36 | 38 | 50 | 50 |
| 2001 | 11 | 25 | 25 | 31 | 38 | 42 | 47 | 47 |
| 2002 | 12 | 11 | 11 | 25 | 32 | 37.5 | 48 | 48 |
| 2003 | 16 | 0 | 0 | 28.5 | 35.5 | 50 | 75 | 75 |
| 2004 | 17 | 10 | 10 | 36 | 43 | 55 | 72 | 72 |
| 2005 | 18 | 21 | 21 | 34 | 48 | 56 | 76 | 76 |
| 2006 | 22 | 17 | 18 | 44 | 48 | 58 | 70 | 79 |
| 2007 | 22 | 36 | 38 | 53 | 60 | 63 | 72 | 73 |
| 2008 | 22 | 31 | 40 | 54 | 60.5 | 65 | 78 | 89 |

c) Proportion of patients on erythropoietin with haemoglobin level >11g/dL, PD centres

| Year | No of centres | Min | 5th centile | LQ | Median | UQ | 95th centile | Max |
|------|---------------|-----|-------------|----|--------|------|--------------|-----|
| 1999 | 7 | 0 | 0 | 8 | 9 | 13 | 16 | 16 |
| 2000 | 9 | 10 | 10 | 16 | 18 | 21 | 24 | 24 |
| 2001 | 11 | 8 | 8 | 10 | 16 | 20 | 23 | 23 |
| 2002 | 12 | 7 | 7 | 13 | 17.5 | 22 | 27 | 27 |
| 2003 | 16 | 0 | 0 | 12 | 15.5 | 22.5 | 52 | 52 |
| 2004 | 17 | 0 | 0 | 13 | 19 | 29 | 54 | 54 |
| 2005 | 18 | 7 | 7 | 20 | 28.5 | 34 | 52 | 52 |
| 2006 | 22 | 5 | 7 | 16 | 24.5 | 32 | 43 | 48 |
| 2007 | 22 | 13 | 14 | 22 | 35 | 44 | 53 | 54 |
| 2008 | 22 | 11 | 14 | 25 | 34 | 44 | 54 | 60 |

Figure 7.3.6(c): Variation in proportion of patients on erythropoietin with haemoglobin level >11g/dL, PD centres 2008

