Item S1. Use of the Competing Risks Nomogram

To illustrate the use of the nomogram, imagine that three patients were initiating PD in your center:

1. Patient 1 is a 77 year old retired teacher with hypertensive nephropathy. She is Caucasian, with a BMI of 24 and a serum albumin of 3.5. Her eGFR is 16.
2. Patient 2 is a 38 year old computer analyst with IgA nephropathy. He is Japanese-American, with a BMI of 23 and an albumin of 4.4. His eGFR is 11.
3. Patient 3 is a 46 year old banker with diabetic nephropathy. He is African-American, with a BMI of 40 and a serum albumin of 3.7. His estimated GFR (eGFR) is 9.

Which of these patients is most likely to transfer to hemodialysis?

(**Note:** When using the axes for "age-if-DMneph," "age-if-HTNneph," and "age-if-employed." If the condition is present, measure points from the age of the patient. If the condition is absent (e.g. non-diabetic, unemployed) then measure points from the zero point on the axis.
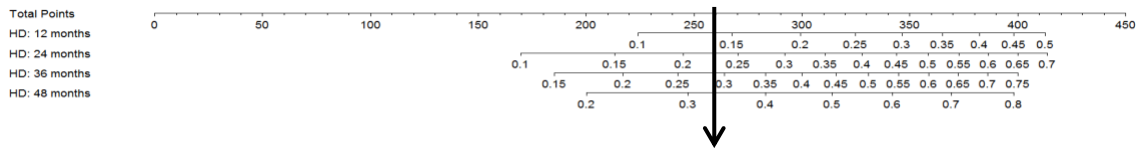
Patient 1:
Using the nomogram, you draw vertical arrows to represent her characteristics. On the nomogram, an age of 77 gives her 7 points. Caucasian race gives her 29 points and a BMI of 24 gives her 23 points. Being retired gives her 61 points, but she receives zero points for a GFR of 16. Her albumin of 3.5 gives her 38 points. You could draw another arrow for diabetic nephropathy, but you do not bother since she is not diabetic and receives zero points. Hypertensive nephropathy gives her 32 more points, as well as 7 points on the "age-if-HTNneph" axis (dotted line). Because she does not have DMneph, you mark the "age-if-DMneph" axis at zero, and this results in an additional 62 points (dotted arrow). Since she is not employed, you would draw an arrow from the "age-if-employed" axis at zero, but you do not bother since she receives zero points.
When you add these up, you determine that she has (7+29+23+61+38+32+7+62) = 259 points.
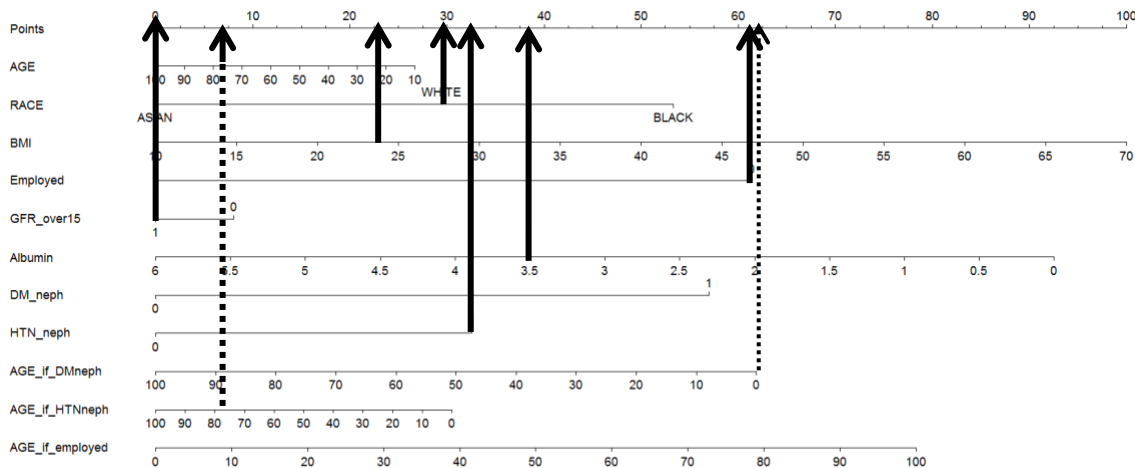

A score of 259 points places Patient 1 toward the upper end of Quartile 1, which means that she has a relatively low risk of requiring transfer to hemodialysis. In the data set, among 3440 patients with scores of 254-264 points, 33.8% transferred to HD. Unfortunately, the competing risk of death is quite high for this patient. She is past the age of retirement, and both hypertensive nephropathy and the need to start dialysis at a high eGFR imply excess cardiovascular risk. The individual from whom this case was derived died approximately 7 months after PD initiation.

If you prefer to use the nomogram rather than the quartile score, you can read the cumulative incidence of PD-to-HD transfer along the arrow, with 14% at 1 year, 23% at 2 years, 29% at 3 years, and 35% at 4 years.
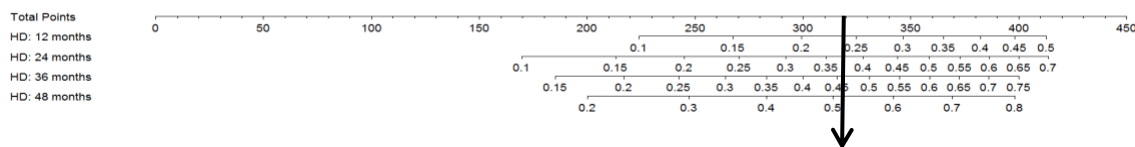

Patient 2:

An age of 46 gives 16 points to Patient 2. He also receives 53 points for African American race and 50 points for his BMI of 40. He receives zero points for being employed. He has 8 points for an eGFR<15 and his serum albumin of 3.7 gives him 36 points. He receives another 57 points for having diabetic nephropathy as his primary diagnosis, but zero points for hypertensive nephropathy. You measure his age on the "age-if-DMneph" axis and assign another 33 points. You measure "age-if-HTNneph" at zero because he does not have hypertensive nephropathy, giving him another 30 points. You assess his age on the "age-if employed" axis, which gives him another 36 points (dotted line). You sum all of this together and find that he has (16 + 53 + 50 + 8 + 36 + 57 + 33 + 30 + 36) = 319 points.
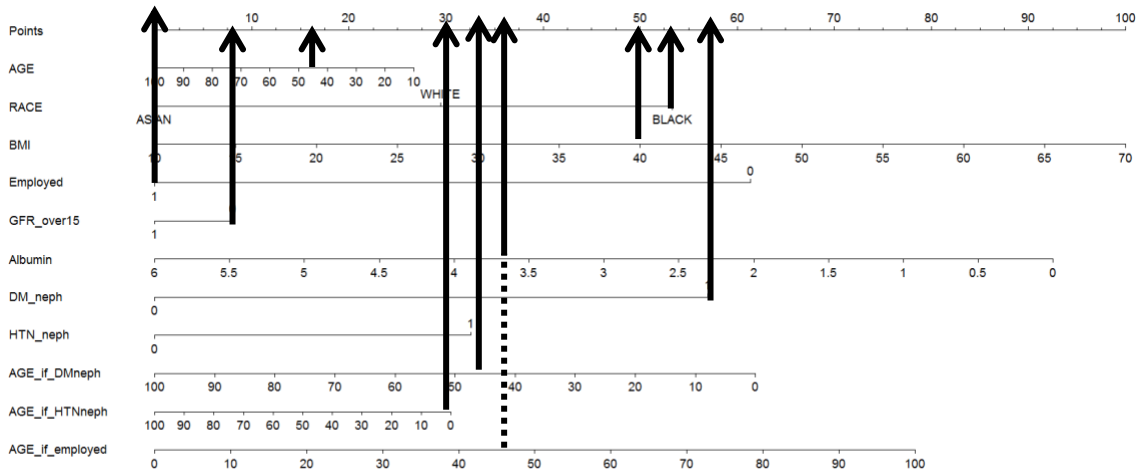

A score of 319 points places Patient #2 squarely in Quartile 4. Among 1411 patients in our data set who had point scores of 314-324 points, 53.5% transferred to HD. African-American race, obesity, and youth all decreased his competing risk of death, yet race and obesity reduced transplantation. So he transitioned to HD in part due to long survival and low opportunity of competing events. The patient from whom this case was derived transferred to HD after 45 months of PD.

Reading directly from the nomogram, you would see high cumulative incidences of PD to HD transfer: 24% at one year, 37% at two years, 46% at three years, and about 52% at four years.

Patient 3:

Patient 3 receives 19 points for his age of 38, and zero points for Asian race. He receives 22 points for a BMI of 23. He receives 0 points because he is employed, and you don't bother with an arrow for this. He receives 8 points for eGFR<15. His serum albumin of 4.4 gives him 25 points. He has no points for diabetes or hypertensive nephropathy, so you omit those two arrows. While he received zero points for being employed, he did receive 29 points on the "age-if-employed" axis. He also gets 62 points on the "age-if-DMneph" axis and 30 points on the "age-if-HTNneph," because you draw those arrows from zero. You add up: (19 + 22 + 8 + 25 + 29 + 62 + 30) = 195 points, placing Patient 3 in Quartile 1.
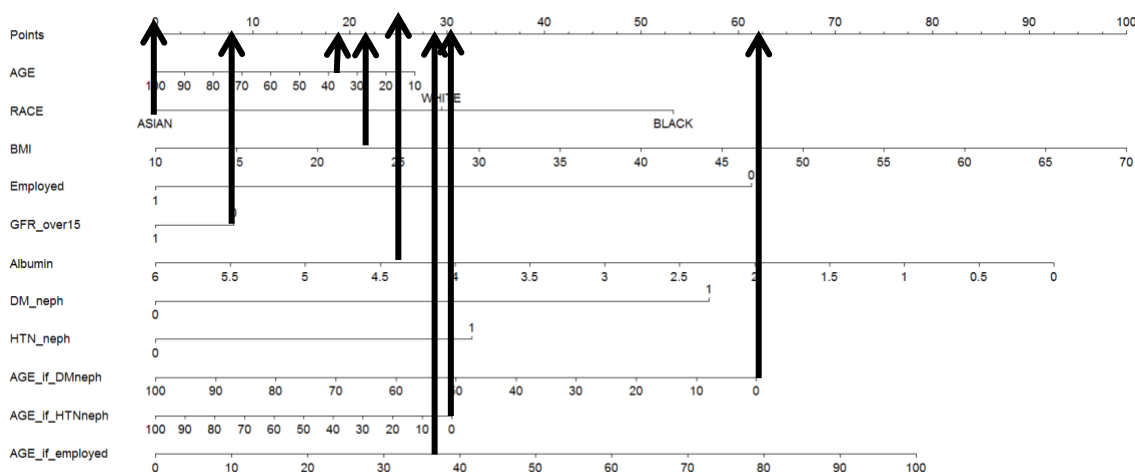
While Patient 1 and Patient 3 shared a low propensity for HD transfer, their competing risks of death and transplantation were completely different. Unlike Patient 1, Patient 3 is a youthful individual with many fortunate characteristics which promote both survival and transplantation. Among patients with scores <200 points, 14% transferred to HD and 52% were transplanted. The individual from whom this case was derived was transplanted after 39 months of PD. A direct reading from the nomogram gives him uniformly low risks of PD to HD transfer: <10% at one year, 13% at two year, 16% at three years, and 19% at four years.