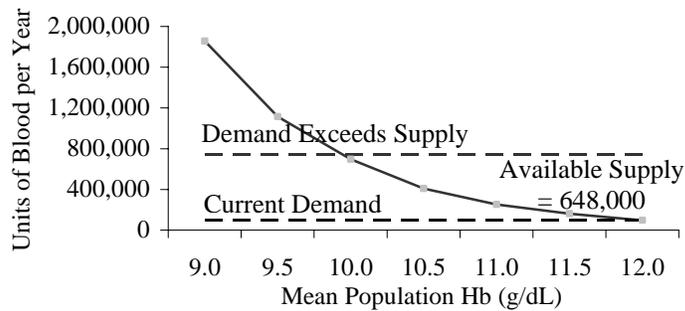


THE IMPACT ON THE US BLOOD SUPPLY OF BLOOD TRANSFUSIONS IN DIALYSIS Gitlin M, Hollenbeak C, Mayne TJ, Amgen Inc., Thousand Oaks, CA; Pennsylvania State University College of Medicine, Hershey, PA. From 1989 to 2004 there has been a 53% reduction in the available US blood supply (surplus over demand), from 14% to 4.4% of collected blood (GAO Report, 1999). During this same time, the percentage of patients transfused has decreased 50%, coinciding with the increased use of erythropoiesis stimulating agents (ESAs). A model was developed to evaluate the blood transfusion impact as a result of changes to mean population hemoglobin (Hb) levels among US dialysis patients. Baseline model inputs include: 1) The 2004 available US blood supply of 648k units or 4.4% (NBCUS, 2005); 2) US dialysis patient census of 350k (USRDS ADR, 2006); 3) relative change in % of patients transfused associated with a mean population Hb (Mayne, 2007), and 4) the annual number of units administered per transfused dialysis patient (Crowley, 1987; Goodnough, 1994). Sensitivity analyses were run varying estimates of the baseline inputs. Figure 1 displays the results of the model of dialysis blood utilization based on a changing mean population Hb range of 9 g/dL to 12 g/dL. A mean Hb = 12 g/dL equates to ~97k unit demand (~97k dialysis patients receiving ~ 1 unit of blood per person) while a mean Hb = 9 g/dL equates to ~1.8M unit demand (~260k dialysis patients receiving ~7 units of blood per person). Figure 1.



The model suggests that, in the absence of increased supply, risks of blood shortages would increase markedly if Hb levels decreased much below 11g/dL.