

CDS Sampling Methods

One stage cluster sampling was used to obtain a sample of 335 dialysis facilities. CDS eligible incident patients identified at these facilities by SIMS September 1, 2005-June 1, 2007 comprised the potential patient sample.

The sampling frame of dialysis facilities was based on the April 7, 2005 version of the Dialysis Facility Compare (DFC) database downloaded from the Centers for Medicare and Medicaid Services (CMS) website. Data on number of annual incident dialysis patients for each facility were obtained from the most recently available (2003) CMS ESRD Facility Survey. The two databases, DFC and 2003 Facility Survey, were merged to provide a size measure (annual incident dialysis patients) for each facility. The size measure allowed projection of incident patients in the sample over 10 months in 2005-2006 and ppes (probability proportional to estimated size) sampling for some facilities. A size measure was imputed, based on number of dialysis stations, for 315 facilities, 75% of which were certified after 2003 and, hence, not included in the 2003 Facility Survey. The following types of facilities were eliminated from the sampling frame: VA, children only, outside the 50 states and DC, and transplant only. The final sampling frame contained 4410 facilities.

The sampling frame was sorted by network and then by adjacent states within network. Further, the sampling frame was sorted within state in a serpentine (Reference: SAS PROC SURVEYSELECT) manner by the size measure. A sample of 335 facilities was selected using equal probability systematic random sampling. Using systematic random sampling in conjunction with the sorted facility sampling frame yields implicit geographical stratification (network and state within network) for the sample facilities. Also, with variance estimation based on several strata with exactly two PSU's per stratum, estimated variances for analyses using the total sample may be minimized by systematic random sampling in conjunction with sorting by size measure within state.

The sample of 335 facilities was compared to the population of 4410 facilities on several facility variables: the size measure, number of dialysis stations, facility type (based on digits 3 and 4 of the 6 digit provider ID), chain or not, offer HD or not, offer PD or not, and network. The sample matched the population closely on all of these characteristics.

Because it was not feasible to collect nutrition (dietary history) data and blood specimens from patients affiliated with all of the 335 sample facilities, a subsample of facilities from the 335 sample facilities was selected for the Nutrition/QOL arm of the study. Systematic probability proportional to estimated size (ppes, using the size measure above) sampling was used to select 73 "nutrition" facilities in order to maximize the number of patients in the subsample of facilities. The 262 sample facilities not selected into the "nutrition" subsample were assigned to the "qol_only" subsample. The sampling frame for selecting the nutrition subsample was the 335 sample facilities already selected. However, the sort variable within state was changed from the size measure to zip code, since size measure was used for the unequal probability sampling. Thus, both subsamples, nutrition and qol_only, are implicitly stratified by geography.

On a monthly rolling basis, the CC obtained from CMS a list of incident patients reported in the SIMS as having received regular dialysis at the sample facilities for no more than 3 months and no less than 2 months as of the first of each month September 1, 2005 through June 1 2007 (data cut off dates). Potentially eligible patients reported were required to meet the following criteria:

- (1) Patient must be 18 years old or older
- (2) Patient must be on DIALYSIS throughout as of the CMS data cut off date (i.e. no patients with prior transplantation)
- (3) First service date must be 60 days or more prior to the CMS data cut off date
- (4) Provider as of the CMS cut off date must be one of the CDS sample facilities