

its subsequent report to TDH and CDC.

Failure to adjust AIDS diagnostic data for reporting lag introduces an undercount of recent AIDS incidence cases. A similar bias, which affects specific exposure categories, relates to those cases initially reported with no identified risk of exposure. In addition to the influence of these sources of bias, recent trends in AIDS incidence have been distorted by the 1993 change in the case definition. A special caveat is that all of these sources of bias most likely generate even greater fluctuations or distortions in recent AIDS counts or rates at the regional or county level than at the state level. The same caveat pertains where the Tennessee AIDS incidence data are disaggregated according to such demographic characteristics as age, sex and race.

Figure 2.2.7 depicts trends for AIDS rates for the period 1982-1995 using both year of report (data from CDC) and year of diagnosis (data from TDH HARS). The year of diagnosis trend line has not been adjusted for reporting lag or other factors, such as the 1993 definitional change in what constitutes an AIDS case. Overall, the time trend line based on year of report shows greater fluctuations than that based on year of diagnosis. Especially striking is the sharper spike in the trend line in 1993 for the report versus the diagnostic data. The expanded AIDS case definition in that year probably artifactually increased the number of cases captured by both measures through its incorporation of cases of pulmonary tuberculosis, recurrent pneumonia, invasive cervical cancer and severe immunosuppression, as measured by a CD4+ T-lymphocyte count of less than 200 cells  $\mu\text{L}$  or percent of total lymphocytes less than 14. It likely similarly inflated the number of cases diagnosed by physicians in 1992 though their anticipation of this definitional change.

Excluding the impact of the 1993 definitional change in AIDS, year of diagnosis data manifest an upward trend for AIDS incidence in Tennessee over the 1982-1995 observation period. The less steep increase between 1994 and 1995 shown in this line compared to that in the trend line for the year of report data can be explained by reporting lag. Year of diagnosis data for 1995 reflect AIDS cases diagnosed through March, 1996. Insight into the magnitude of the implications of the reporting lag for the true case count were obtained through a preliminary analysis of corresponding 1994 data. For this purpose, 14 of these 1994 cases erroneously listed as being reported prior to 1994 were redistributed by quarter for the period from January 1, 1994 through July 31, 1996. An estimated 12% of cases diagnosed in 1994 were reported to TDH and CDC between March 1, 1995 and July 31, 1996. This percentage represents an expansion factor that can be applied to estimate a plausible lower limit for total cases diagnosed in 1995. The resulting estimate, which is 879 cases, should approach the eventual documented total.

CDC is developing a technique, which is tailored to fit each state, reflecting past patterns of reporting and using orthogonal regression for adjusting for bias, including bias associated with reporting lag. A preliminary trend line based on the CDC technique