Since, both in importance and in time, health precedes disease, so we ought to consider first how health may be preserved, and then how one may best cure disease.

Galen, Hygiene
The National Committee on Quality Assurance (NCQA) has established targets for care that are directed at the proactive services that improve long-term patient outcomes. Data used to assess these services have been described in the HEDIS 2000® (Health Plan Employer Data and Information Set) standards. We have expanded the preventive care section of the ADR, using methods developed by NCQA, to include a comprehensive view of care that is more pre-emptive in nature, such as influenza vaccinations and monitoring of patients for glycemic control and lipid levels.

Vaccination rates for influenza in the general population have been shown to be associated with reduced hospitalizations and, more recently, with lower rates of acute myocardial infarction. Overall, influenza vaccinations are given to only 50% of ESRD patients, and there is a 72% difference in vaccination rates across the country, with the western United States having the lowest rates (fig 10.1). For-profit units are more likely to vaccinate their patients than non-profit units, which may reflect differences in quality assurance initiatives or financial incentives for billing. The lowest rates of vaccination occur in the peritoneal dialysis population, which may reflect a reduced contact with the provider system compared to the three times per week access to care that is common in the hemodialysis population. Vaccination rates are higher for older patients, an age disparity that is difficult to reconcile since all ESRD patients are considered at risk compared to the general population (fig 10.9).

The likelihood of being hospitalized is significantly reduced in patients who receive an influenza vaccination in the fall of the year (fig 10.10). Diabetic males, however, do not appear to benefit overall compared to their non-diabetic counterparts, but those who do benefit have a lower likelihood of hospitalization for influenza-related pneumonia and bacteremia. Females who are vaccinated have a lower likelihood of being hospitalized for influenza-related pneumonia, bacteremia/viremia/sepsis, and vascular access infections compared to those not vaccinated. These findings are similar to those in the general population showing lower hospitalizations and AMI risk in patients vaccinated for influenza.

Rates of development of new cancers have increased in older patients, and there are racial differences in the distribution of these rates. Compared to other racial groups, black patients do not show an increase in the rates of development of new cancers. The lowest rates of development of new cancers are in Native American patients (fig 10.2). Some of these differences in screening and diagnosis rates may be related to cultural issues or to a lack of access to care, particularly based on the availability of medical insurance.

In order to identify cancer at an earlier stage and reduce patient morbidity and mortality, screening for cancer has been a public health initiative for many years. Breast cancer screening rates increased from 1996 to 1998 (fig 10.3) as did rates for cervical (fig 10.4) and prostate cancer screening (fig 10.5). Despite these increases, however, rates continue to be markedly lower than those recommended in HEDIS 2000® by the National Committee for Quality Assurance (NCQA). Native Americans receive the least amount of screening across all racial groups.

The prevention of retinal hemorrhages is a cornerstone of diabetic care, and rates of diabetic eye examinations (fig. 10.11) present an excellent measure of this indicator. On average, only 50% of ESRD patients have diabetic eye examinations over a two-year period. Native Americans have the lowest examination rates, while testing rates are similar in Hispanics and whites (fig 10.11). Geographically, eye examination rates are lowest in the southwest, northwest, Michigan, Ohio, and areas of Indiana (fig 10.12).

Reimbursement for diabetic testing supplies used in monitoring blood
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The percentage of diabetic patients receiving glycosylated hemoglobin tests is presented in Figure 10.15. Based on profit status, there is a marked difference in monitoring rates. For-profit units monitor glycemic levels more often than non-profit units, with the difference in monitoring rates being even more apparent in the peritoneal population. Non-profit units are 35–40% less likely to monitor glycemic control in peritoneal dialysis patients than for-profit units. The reasons for these differences are not easily explained, other than perhaps the financial incentives related to for-profit units. Most large for-profit chains also have their own laboratories that can bill for additional tests under an indication of diabetes glycemic control monitoring. Hospital-based units may have similar relationships to their own laboratories but may not take advantage of the opportunity to perform these tests. Another possibility may reflect actual differences in acuity levels between for-profit and non-profit units. It has been suggested that non-profit units tend to care for sicker patients. If this is the case, non-profit units would in fact be more likely to monitor unless there was a clinical belief that ESRD diabetics would not benefit from the monitoring. Further investigation of monitoring rates may give some insight into practice patterns for diabetic treatment. Whatever the case, rates of glycemic monitoring remain low, with fewer than 30% of all diabetics receiving three or more HbA1c tests in 1999 (fig 10.16). Across the country there is a 2.4 fold difference between areas with the lowest and highest rates (fig 10.16). The southwestern and mid-central states had the highest rates of monitoring.

All of the patterns in risk factor monitoring will need to be correlated to determine areas where comprehensive care is given and whether this care is associated with differences in outcomes such as amputation rates, retinal hemorrhages, or acute myocardial infarction rates.

INCLUDED IN THIS CHAPTER

• Graphs showing screening rates for breast, cervical, and prostate cancer, and the rate of diagnosis of these cancers in ESRD patients
• A graph showing the likelihood of hospitalization after receiving an influenza vaccine
• Graphs and maps showing rates of diabetic eye exams, the use of diabetic testing supplies, glycosylated hemoglobin testing, and lipid monitoring
Figure 10.3
Breast cancer screening, by age & race/ethnicity
Patients included were alive throughout 1996 and 1999. Excludes patients with Medicare as secondary payer, along with risk HMO enrollees.
Breast cancer screening rates continue to be low across all age and racial groups. Rates are particularly low in Native American women.

Figure 10.4
Cervical cancer screening, by age & race/ethnicity
all female ESRD patients aged 21–64 who initiated therapy prior to January 1, 1994 (1996 data) and January 1, 1997 (1999 data)
Patients included were alive throughout 1996 and 1999. Excludes patients with Medicare as secondary payer, along with risk HMO enrollees.
Cervical cancer screening rates are low across all age groups, and the rate of screening declines as patients get older. As is the case with breast cancer screening, Native American women continue to have the lowest screening rates among racial and ethnic groups.

Figure 10.5
Prostate cancer screening, by age & race/ethnicity
all male ESRD patients 50 years of age or over who initiated therapy prior to January 1, 1994 (1996 data) and January 1, 1997 (1999 data)
Excludes patients not eligible for Medicare enrollment. See Appendix A for code specifications.
Prostate screening rates (PSA testing) have increased since 1996 across all age groups, with the highest incidence of screening occurring in patients over 70 years of age. Compared to other races, Native Americans have the lowest screening rates.
Figure 10.6
Breast cancer diagnosis rates, by age & race/ethnicity
all female ESRD patients initiating therapy between 1995 and 1998, without cancer as a cause of renal failure or a comorbid condition on the 2728 form
Follow-up is one year after initiation, and patients are followed until a cancer diagnosis or death.
Since 1996, breast cancer diagnosis rates (based on previous screening of patients for up to two years prior to 1996 or 1999), have declined for patients aged 65 years and older. Breast cancer diagnosis rates have increased in blacks, Native Americans and Asians.

Figure 10.7
Cervical cancer diagnosis rates, by age & race/ethnicity
all female ESRD patients initiating therapy between 1995 and 1998, without cancer as a cause of renal failure or a comorbid condition on the 2728 form
Follow-up is one year after initiation, and patients are followed until a cancer diagnosis or death.
Cervical cancer diagnosis rates (based on previous screening of patients for up to two years prior to 1996 or 1999) have declined in patients aged 20–44 and in patients 65 and older. For patients aged 45–64, diagnosis rates in 1999 are approximately three times higher than diagnosis rates in 1996.

Figure 10.8
Prostate cancer diagnosis rates, by age & race/ethnicity
all male ESRD patients initiating therapy between 1995 and 1998, without cancer as a cause of renal failure or a comorbid condition on the 2728 form
Follow-up is one year after initiation, and patients are followed until a cancer diagnosis or death.
Prostate cancer diagnosis rates in 1999 were lowest for Native American and Asian patients, while rates for white and Hispanic patients increased markedly compared to 1996 rates.
Figure 10.9
Patients receiving influenza vaccinations, by age, modality, & unit profit status
all dialysis patients alive from September 1 through December 31, 1999
Excludes patients with Medicare as secondary payor, along with risk HMO enrollees. Part A and B claims from September 1 through December 31, 1999 searched for CPT codes 90724, 90657, 90658, or 90659, or HCPCS code G0008.
Higher percentages of patients are vaccinated in for-profit dialysis units compared to non-profit units.

Figure 10.10
Likelihood of hospitalization after influenza vaccination, by gender & primary diagnosis
all hemodialysis patients initiating therapy prior to January 1, 1998 & alive on March 31, 1999; adjusted for age, gender, race, primary diagnosis, prior ESRD time, & hospital days between January & August, 1998
Influenza vaccinations received between September and March, 1998. Influenza/pneumonia, bacteremia/viremia/septicemia, and vascular access infection are abbreviated on the x-axis.
The risk of hospitalization in patients with diabetes as a primary cause of renal failure compared to patients with other causes is similar in both males and females.

Figure 10.11
Diabetic eye exams, by age & race/ethnicity
diabetic ESRD patients initiating therapy prior to January 1, 1998 & alive on December 31, 1999
HEDIS® 2000 criteria are used for definitions of diabetics and diabetic eye exams.
Females are more likely to receive diabetic eye exams, as are older patients. Native Americans have the lowest rates of diabetic eye exams compared to other racial and ethnic groups.
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**Figure 10.12**
Percent of patients receiving diabetic eye exams

diabetic ESRD patients initiating therapy prior to January 1, 1998 & alive on December 31, 1999, by HSA, smoothed

HEDIS’ 2000 criteria are used for definitions of diabetics and diabetic eye exams.

Rates of diabetic eye exams are highest in the Upper Midwest, the Northeast, the Gulf Coast states, and areas in California. Even in these areas where testing is more likely, however, an average of only 51% of all eligible patients receive exams.

**Figure 10.13**
Use of diabetic testing supplies, by age, gender, & race/ethnicity

diabetic ESRD patients initiating therapy prior to January 1, 1999 & alive on December 31, 1999

HCPCS codes used to define diabetic testing supplies: A4253–55, E0607, E0609.

The percent of patients using diabetic testing supplies is highest in the southern portions of the country, the Great Lakes region, and Maine. Even in these areas, however, only half of the diabetic patients bill Medicare for testing supplies.
Patients receiving glycosylated hemoglobin testing (HbA1c), by number of tests, age, modality, & unit profit status.

HEDIS® 2000 criteria are used for definitions of diabetics and glycosylated hemoglobin testing.

Patients in for-profit units are more likely to receive a glycosylated hemoglobin test than those in non-profit units.

The percent of diabetics who receive no testing decreased from almost 70% in 1996 to 55% in 1999.

There is a 134% difference in the mean percent of patients receiving glycosylated hemoglobin testing between the lowest and highest quintiles. Even within the highest quintile, only two thirds of the patients receive diabetic testing.
There is a 41% difference between the HSAs with the lowest percentage of testing for lipids in diabetic patients and those with the highest. Even in the highest quintile, on average, only 61% of the patients receive lipid tests in non-profit units.

Overall, lipid monitoring occurs in fewer than 61% of all diabetic patients. The lowest rates of monitoring are in blacks and Native Americans, while the highest rates are in Asians.

There is a 41% difference between the HSAs with the lowest percentage of testing for lipids in diabetic patients and those with the highest. Even in the highest quintile, on average, only 61% of the patients receive lipid testing.
Figure 10.21
Lipid monitoring in non-diabetic patients, by age, gender, & race/ethnicity
non-diabetic ESRD patients initiating therapy prior to January 1, 1999 & alive on December 31, 1999

CPT codes used to define lipid monitoring: 80061, 82465, 83715–721, 84478.
Non-diabetic patients tend to receive less lipid monitoring than diabetic patients.

Figure 10.22
Percent of non-diabetic patients receiving lipid monitoring
non-diabetic ESRD patients initiating therapy prior to January 1, 1999 & alive on December 31, 1999, by HSA, smoothed

CPT codes used to define lipid monitoring: 80061, 82465, 83715–721, 84478.

The percent of non-diabetic patients receiving lipid testing varies widely across the country. Rates are highest on the West Coast and in Texas, portions of Missouri, Arkansas, North Dakota, Minnesota, and the Northeast. Even at the highest rate, only 44% of non-diabetics receive testing.