

CKD and Public Health Initiatives

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Nephrology and Public Health Policy

- Prior to the 1960s death was the universal outcome for those with End Stage Kidney Disease
- The introduction of kidney transplantation was a major milestone but to sustain an individual with ESKD, dialysis was needed on an outpatient basis.
- Nephrology as a specialty entered into a new era in 1960 when outpatient treatment was sustained by a shunt between an artery and vein to perform chronic outpatient dialysis.
- Nephrology had a potential life sustaining treatment for a large number of individuals with kidney disease

Nephrology and Public Health Policy-2

- The cost of dialysis in the early days was extremely high and there was no government or private insurance coverage to pay for the treatment leading to selection committees to decide life and death for those with ESKD.
- The success of dialysis and kidney transplantation created a public health dilemma for policy makers since a truly life sustaining treatment was available at a time when ESKD was the 5th leading cause of death in the developed countries.
- In the United States, the disparities in access to care based purely on financial resources and the life sustaining nature of the dialysis and kidney transplantation led in 1972 to universal coverage of those with ESKD under the Medicare program.

Nephrology and Public Health Policy-3

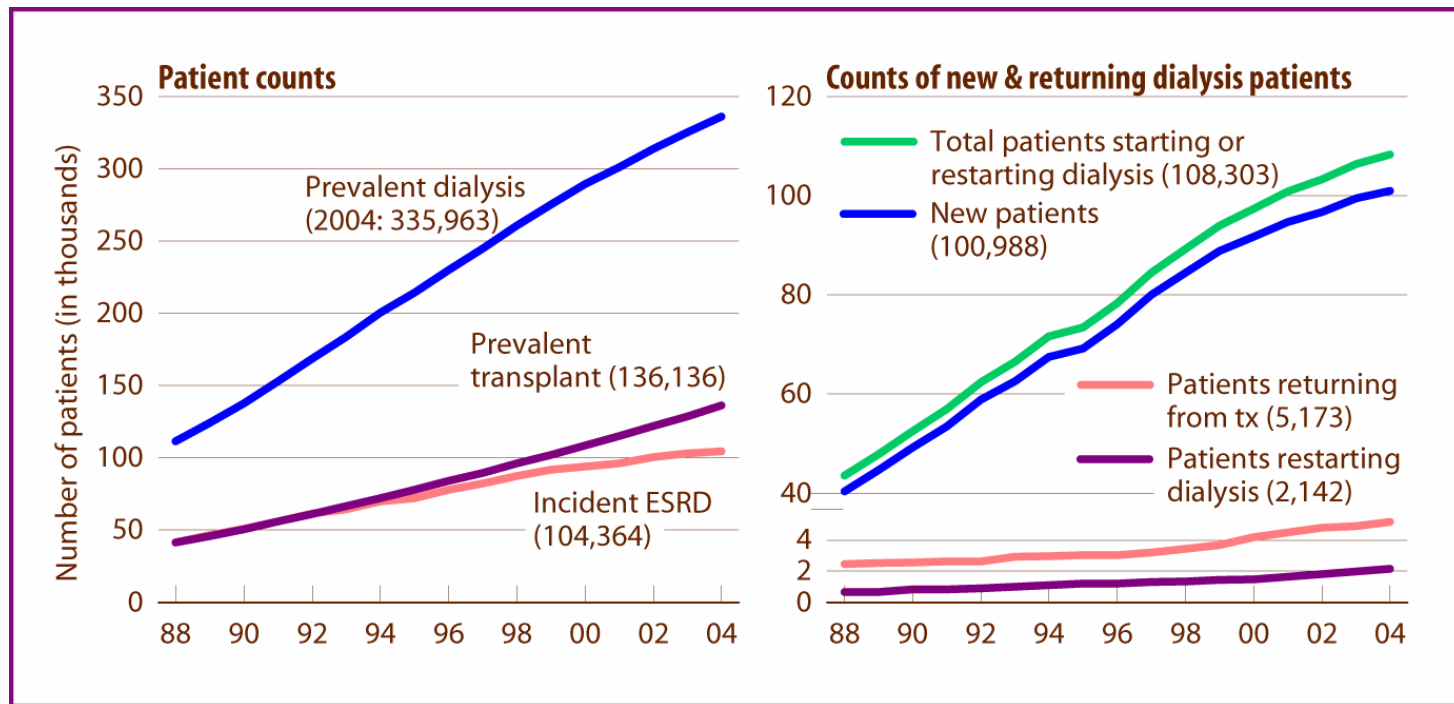
- ❁ **Other developed countries followed and covered ESKD, but there was considerable concern about the cost of this life sustaining treatment for a small portion of the population compared to other public health priorities.**
- ❁ **In spite of these concerns, the introduction of dialysis and kidney transplantation into a country was viewed as a right of passage for a developed and developing countries.**

Nephrology and Public Health Policy-4

- Initial estimates indicated the ESKD population in the US would plateau at 40,000 individuals but these estimates were off by 10 fold!
- Currently, in the US the prevalent ESKD population has reached 472,000 with projections it will reach 650,000 by 2010 and may increase to 2.1 million by 2030.

Patient counts & counts of new & returning dialysis patients

Figure p.2 USRDS 2006 ADR



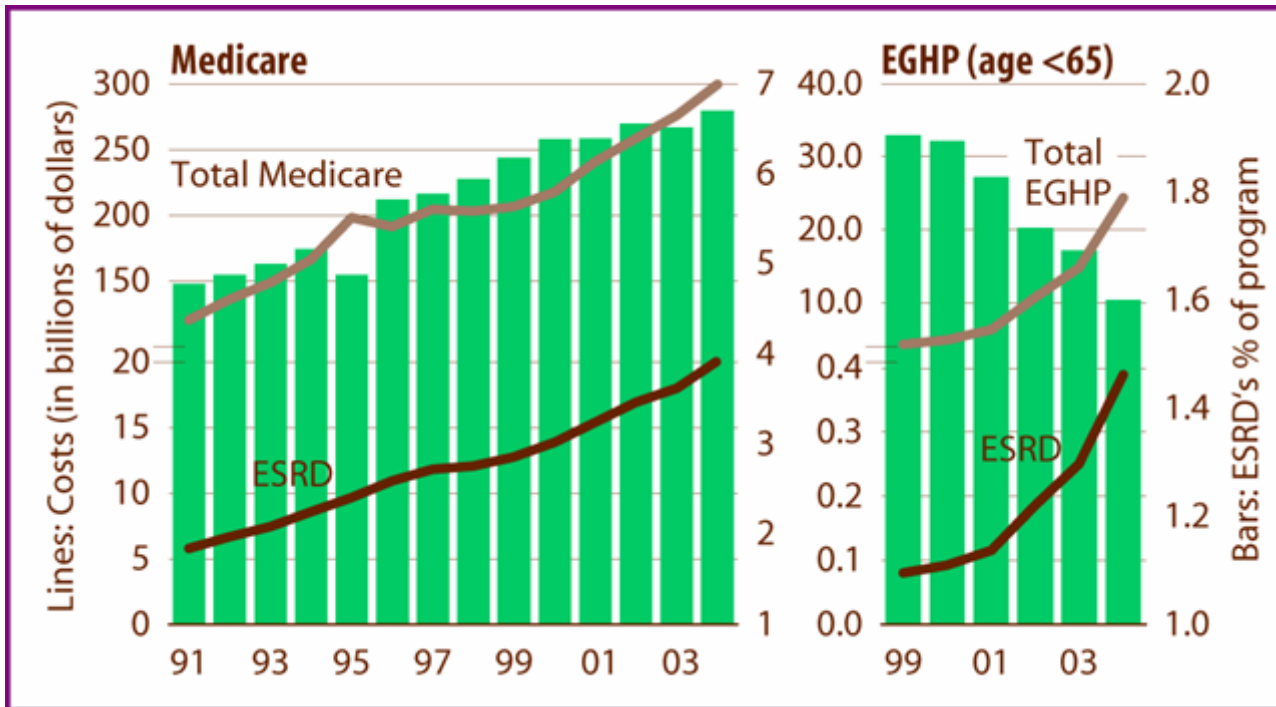
First graph: incident patients & December 31 point prevalent patients. Second graph: data obtained from CMS's annual End-Stage Renal Disease Facility Survey, CMS Independent Renal Facility Cost Reports, & the CMS "Dialysis Facility Compare" website.

ESRD growth and public health policy-1

- **The continued growth of the ESKD population has been world wide with current estimates indicating there are over 1.2 million individuals on dialysis.**
- **The costs of the ESKD programs are considerable, in the US reaching \$32 billion in 2004 and consuming 6.8% of the \$300 billion US Medicare health care budget expenditures.**
- **On a total health care level, ESKD consumes about 2% of total US health care including Medicare and the private insurance system.**

Costs of the ESKD, Medicare, & EGHP programs

Figure p.24 USRDS 2006 ADR



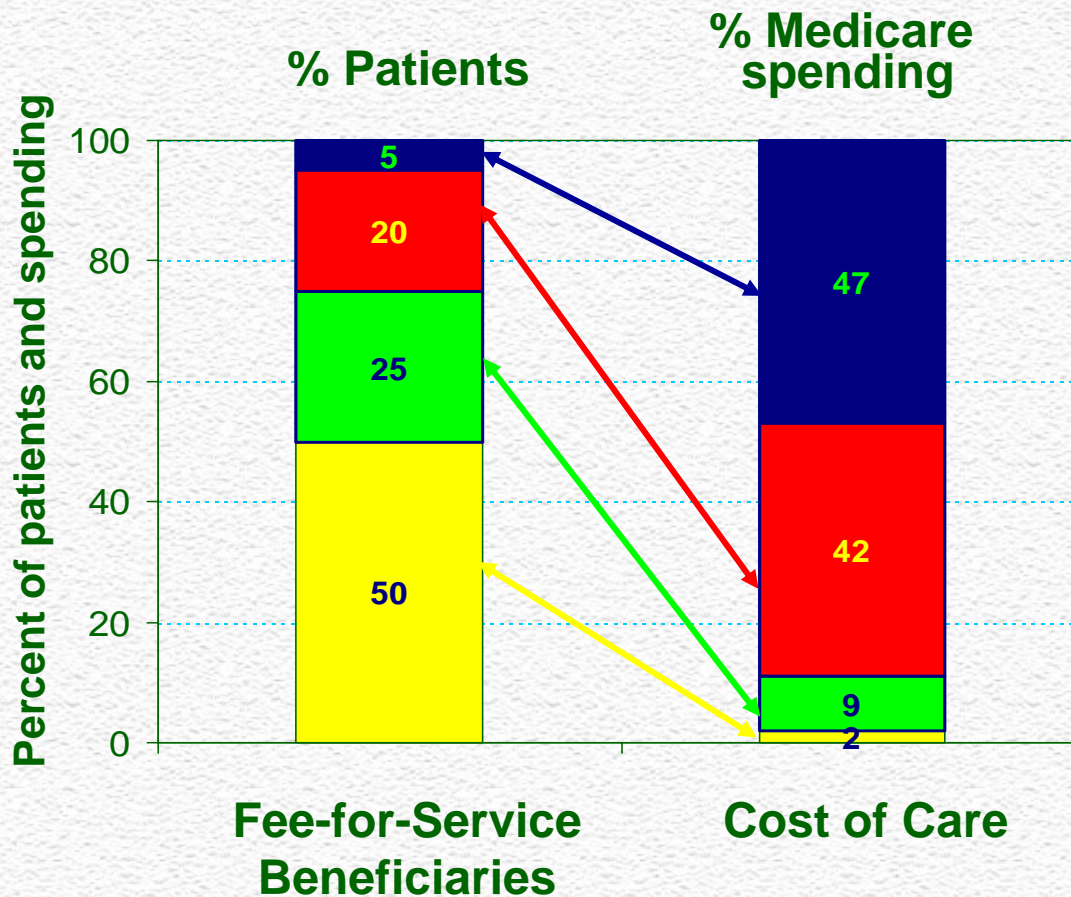
Total ESRD expenditures are from paid claims as well as estimated costs for HMO & organ acquisition. ESRD costs in 2004 are inflated by 2 percent to account for costs incurred but not reported. Total Medicare expenditures obtained from the CMS Office of Financial Management, Division of Budget. EGHP data derived from the Medstat claims database that includes ESRD patients younger than 65 & with no Medicare payments.

Health care expenditures and CKD

- **Recognized CKD in the Medicare population**
- **Recognized CKD in the employed population**
- **Access to care**

Perspectives on chronic disease: Medicare Beneficiaries and their cost of care*

5% Medicare sample, 1997 cohort (CBO 9-18-02)



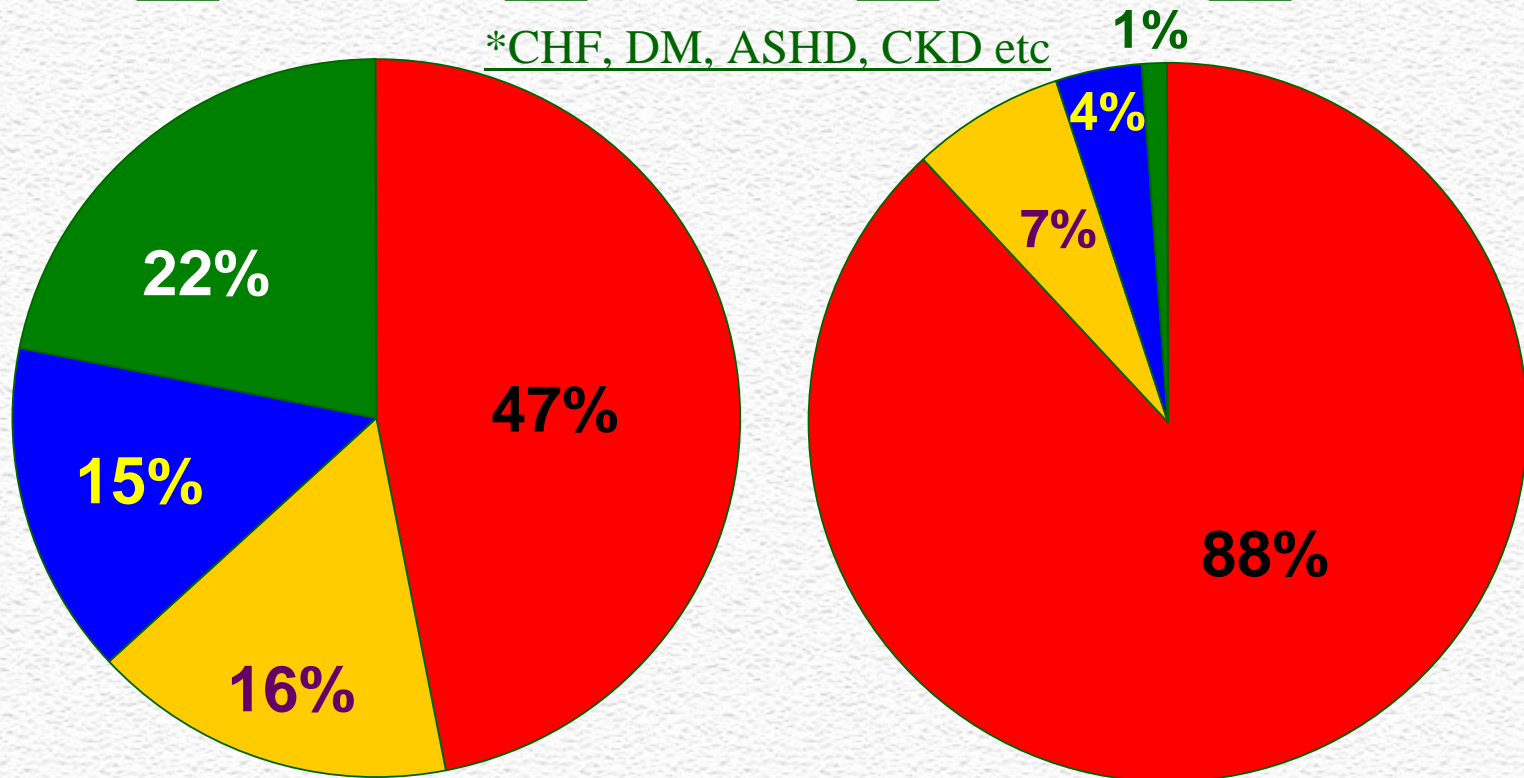
*Congressional Budget Office Testimony: Dan L. Crippen, Director

Percent of Medicare Beneficiaries and spending by the number of Chronic Conditions*:

5% Medicare sample, 1997 (CBO 9-18-2002)



*CHF, DM, ASHD, CKD etc



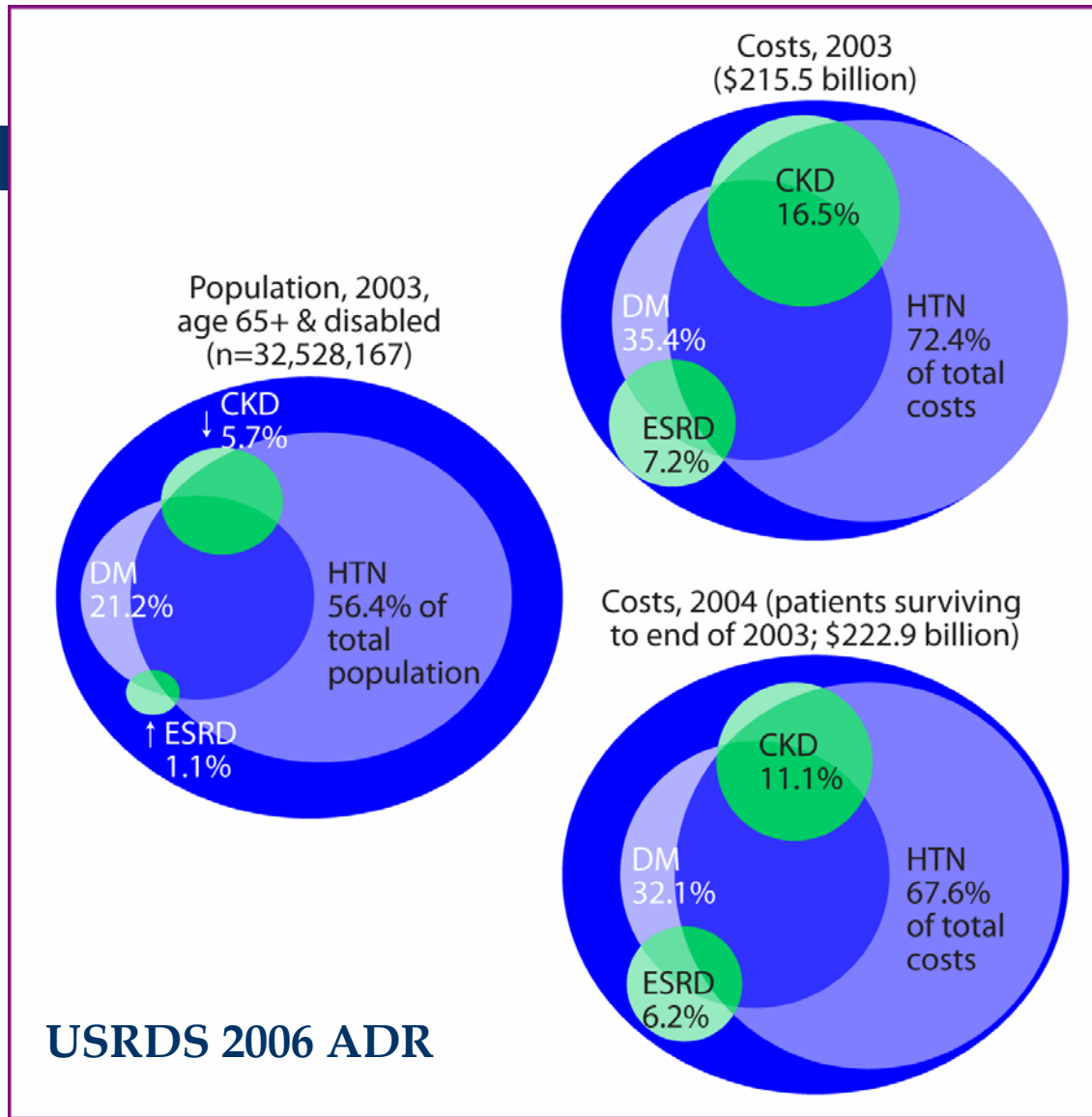
Medicare beneficiaries

Medicare spending

*Congressional Budget Office Testimony: Dan L. Crippen, Director

Distribution of Medicare patient counts & costs for CKD, HTN, diabetes, & ESRD

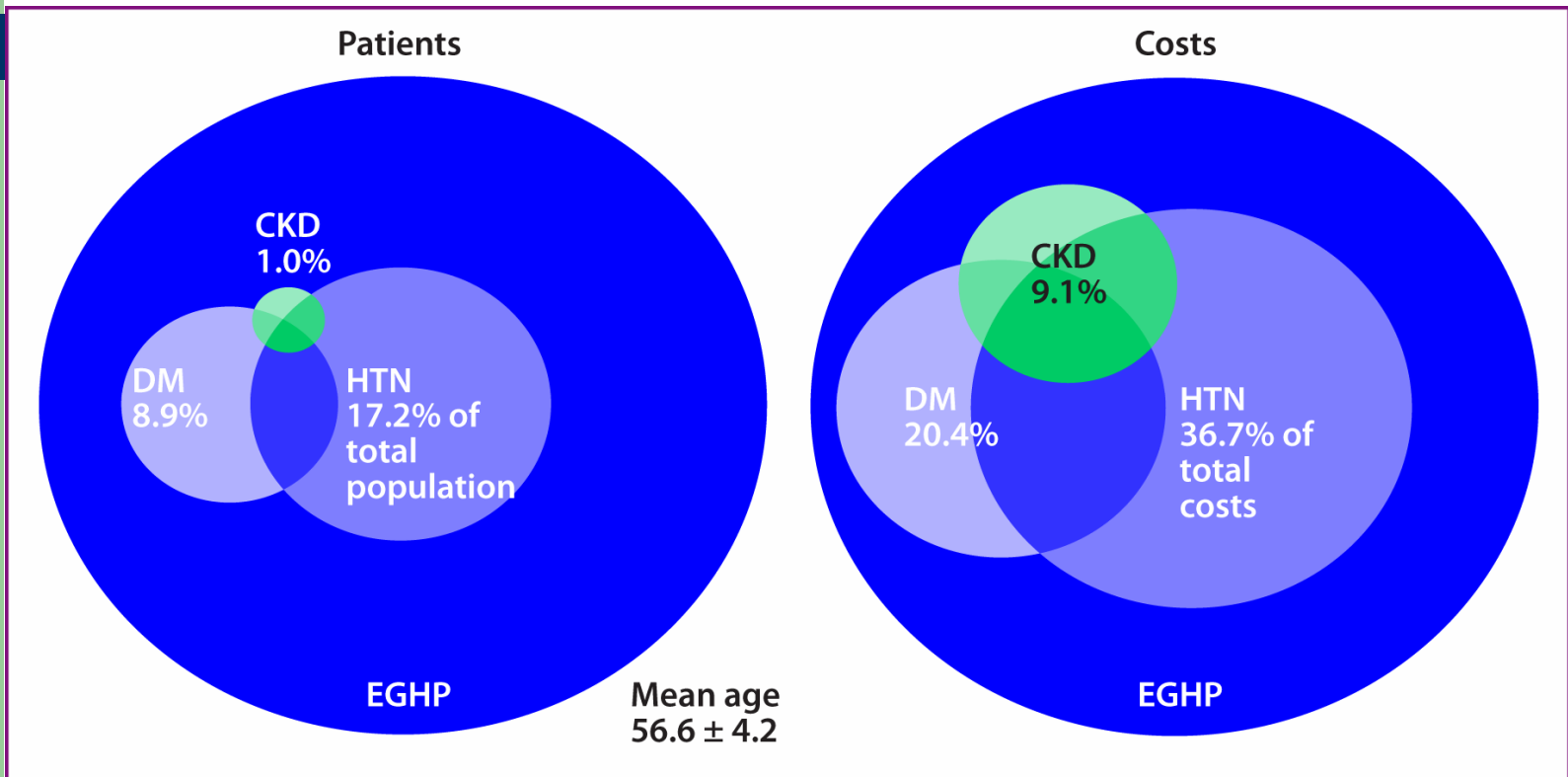
Figure p.1



populations estimated from the 5 percent Medicare sample, & include patients surviving the entire cohort year (2002) with Medicare as primary payor, plus period prevalent ESRD patients for 2003. Diabetes & CKD are determined from claims in 2002 & 2003; hypertension is defined from Medicare claims in the 5 percent sample, but includes only hypertension as the primary cause of renal failure in ESRD patients.

Distribution of EGHP patients & costs: CKD, HTN, & diabetes, 2004 ages 50-64

Figures p.34-35



patients in the Medstat database, age 50–64, who survive & are eligible for all of 2003; ESRD patients excluded. Diagnoses determined from claims in 2003. Costs are for calendar year 2004, with patients censored at development of ESRD.

CKD and Public Health Policy

- **Chronic diseases are a major public health problem (world wide-WHO)**
- **The total recognized CKD population accounts for just 7% of the Medicare population but consumes 23-25% of all the expenditures**
- **CKD is highly interactive with DM, CHF and HTN representing the largest multiplier disease!**

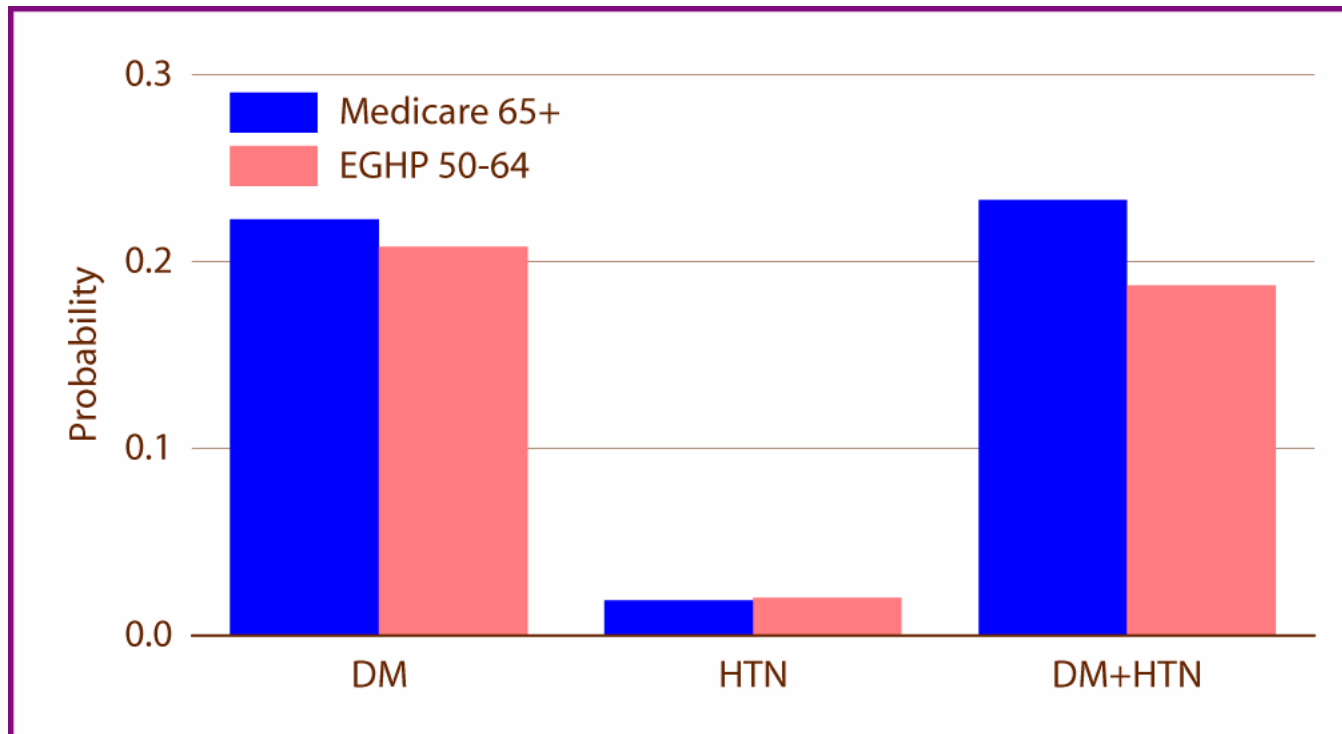
CKD treatment is poor

- **At-risk populations receiving simple risk factor monitoring**
- **Employed populations under private insurance**
- **How should the public health world respond?**

Probability of the assessment of 1+ microalbuminuria or proteinuria tests within a year, 2004

USRDS 2006 ADR

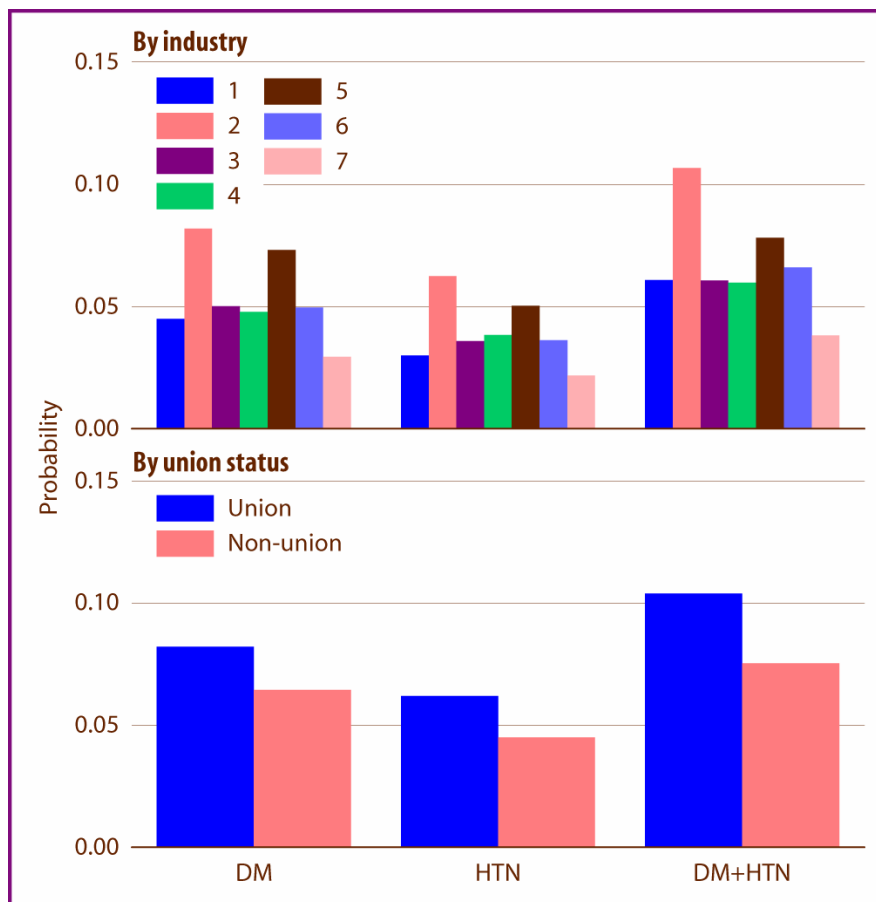
Figure 1.8



general Medicare: patients entering Medicare before January 1, 2003, age 65 & older, alive on December 31, & without a diagnosis of CKD during 2003. Patients enrolled in an HMO or with Medicare as secondary payor or diagnosed with ESRD during the year are excluded. EGHP: patients enrolled for the entire year 2003 in a fee-for-service plan, age 50–64, & without a diagnosis of CKD during 2003. Patients diagnosed with ESRD before or during the year are excluded. For both populations, diabetes & hypertension are defined in 2003. Patients censored at end of the plan & end of 2004; Medicare patients also censored at death. All tests tracked in 2004.

Assessment of one or more serum creatinine-specific tests within a year, by industry & union status

Figure 1.12

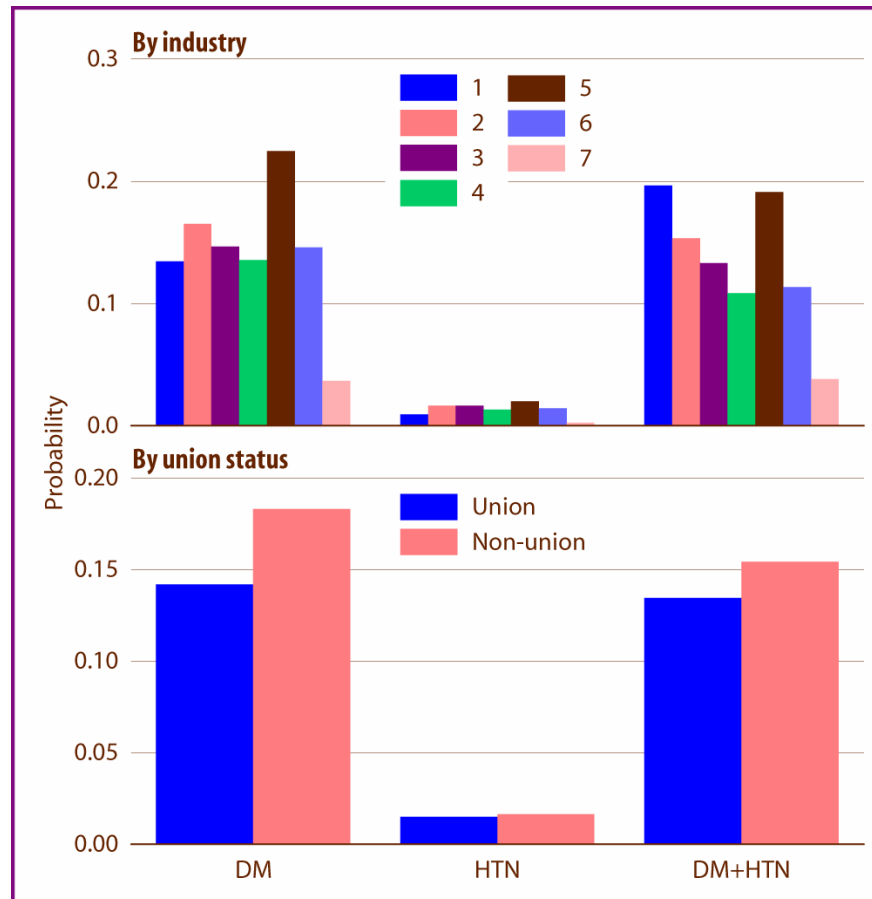


- 1 • Oil & gas extraction, mining
- 2 • Manufacturing, durable goods
- 3 • Manufacturing, non-durable goods
- 4 • Transportation, communications, utilities
- 5 • Retail trade
- 6 • Finance, insurance, real estate
- 7 • Services

patients enrolled for the entire year 2003 in a fee-for-service plan, without a diagnosis of CKD during 2003; patients diagnosed with ESRD before or during the year are excluded, as are spouses or children of the primary subscribers. Diabetes & hypertension defined in 2003. Patients are censored at end of the plan & end of 2004. Testing tracked in 2004.

Assessment of one or more microalbuminuria or proteinuria tests within a year, by industry & union status

Figure 1.13



- 1 • Oil & gas extraction, mining
- 2 • Manufacturing, durable goods
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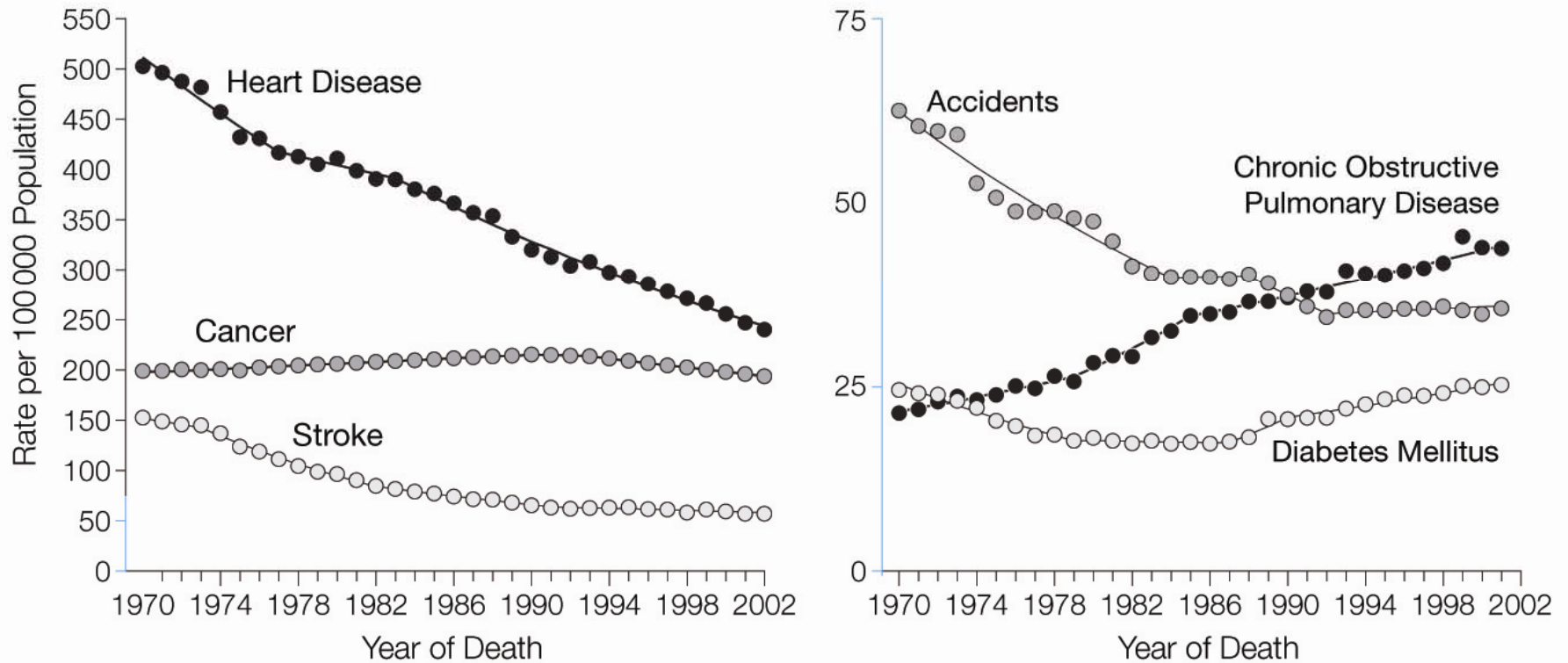
CKD and Public health, call to action!

- **The current health care system does little to assess at-risk populations for CKD**
- **Providers need to be given simple tools to detect the CKD population**
- **Providers need to know the treatment of the CKD subpopulation is different and more complex than the general population**
- **Public awareness and provider education programs are needed to address the high risk CKD groups**

Detection and treatment of CKD

- **If we find the CKD subpopulations will treatment make a difference?**
 - **CVD death rates are down-CDC data**
 - **What about ESKD rates? (USRDS surveillance data)**

Figure 1. Trends in Age-Standardized Death Rates for the 6 Leading Causes of Death in the United States, 1970-2002



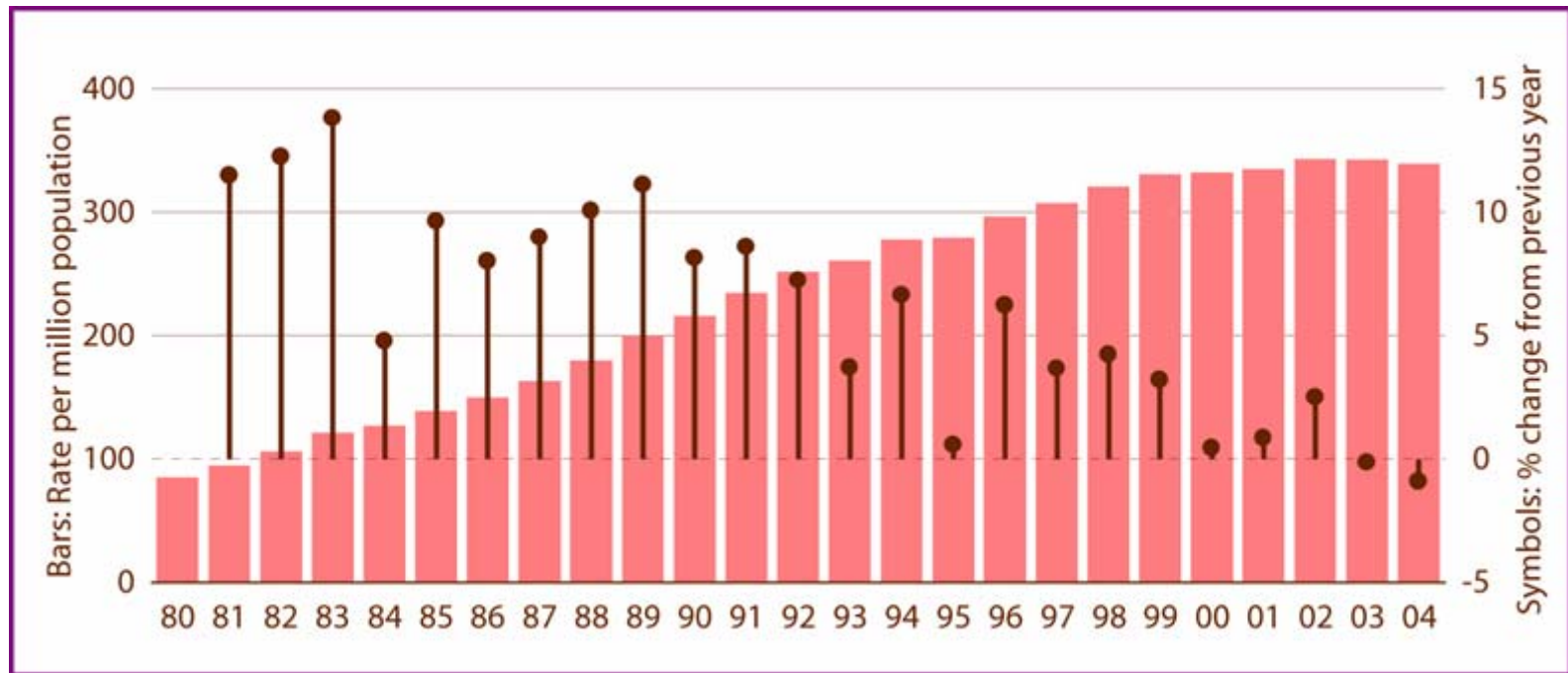
Rates are age-adjusted to the 2000 US standard population.

CKD and CVD death rates

- **Some have suggested that treatment of CVD will lower death rates and increase the number of individuals reaching ESKD!**
- **CVD death rates are down, so what has happened to ESKD rates?**

Adjusted incident rates & annual percent change

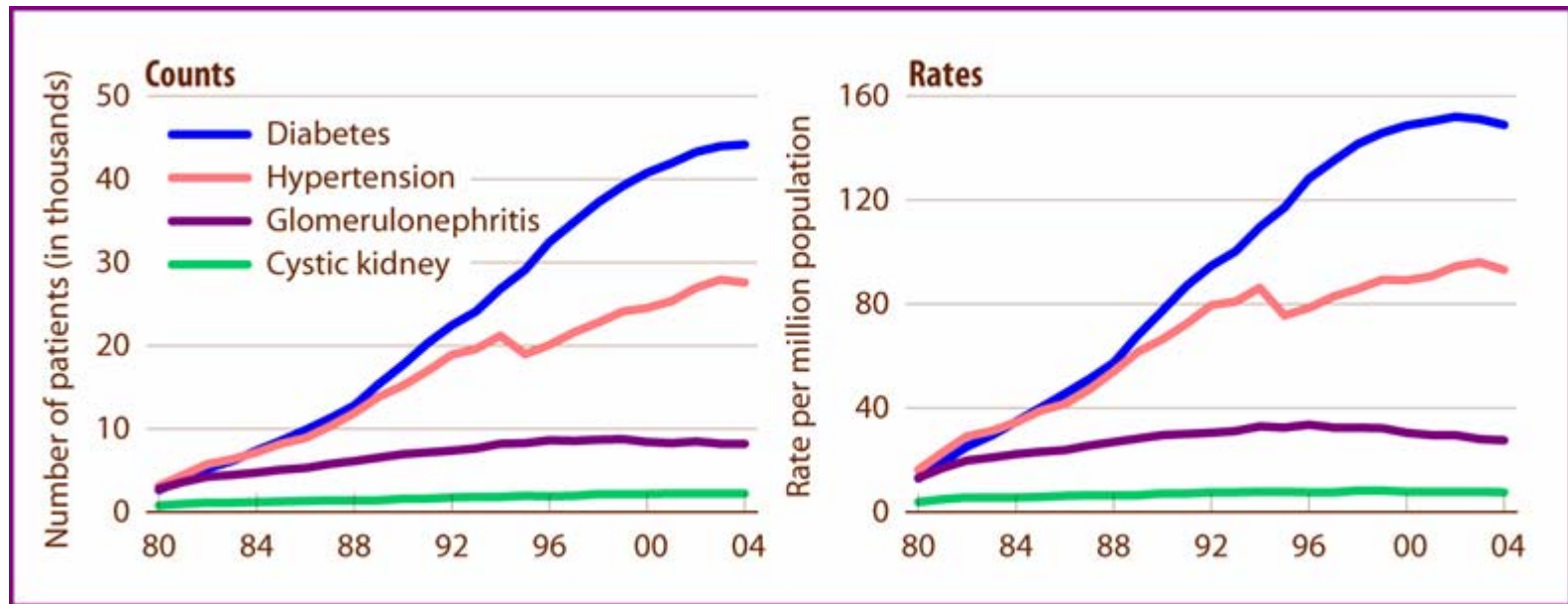
Figure 2.2



Incident ESRD patients. Rates adjusted for age, gender, & race.

Incident ESRD counts & adjusted rates, by primary diagnosis

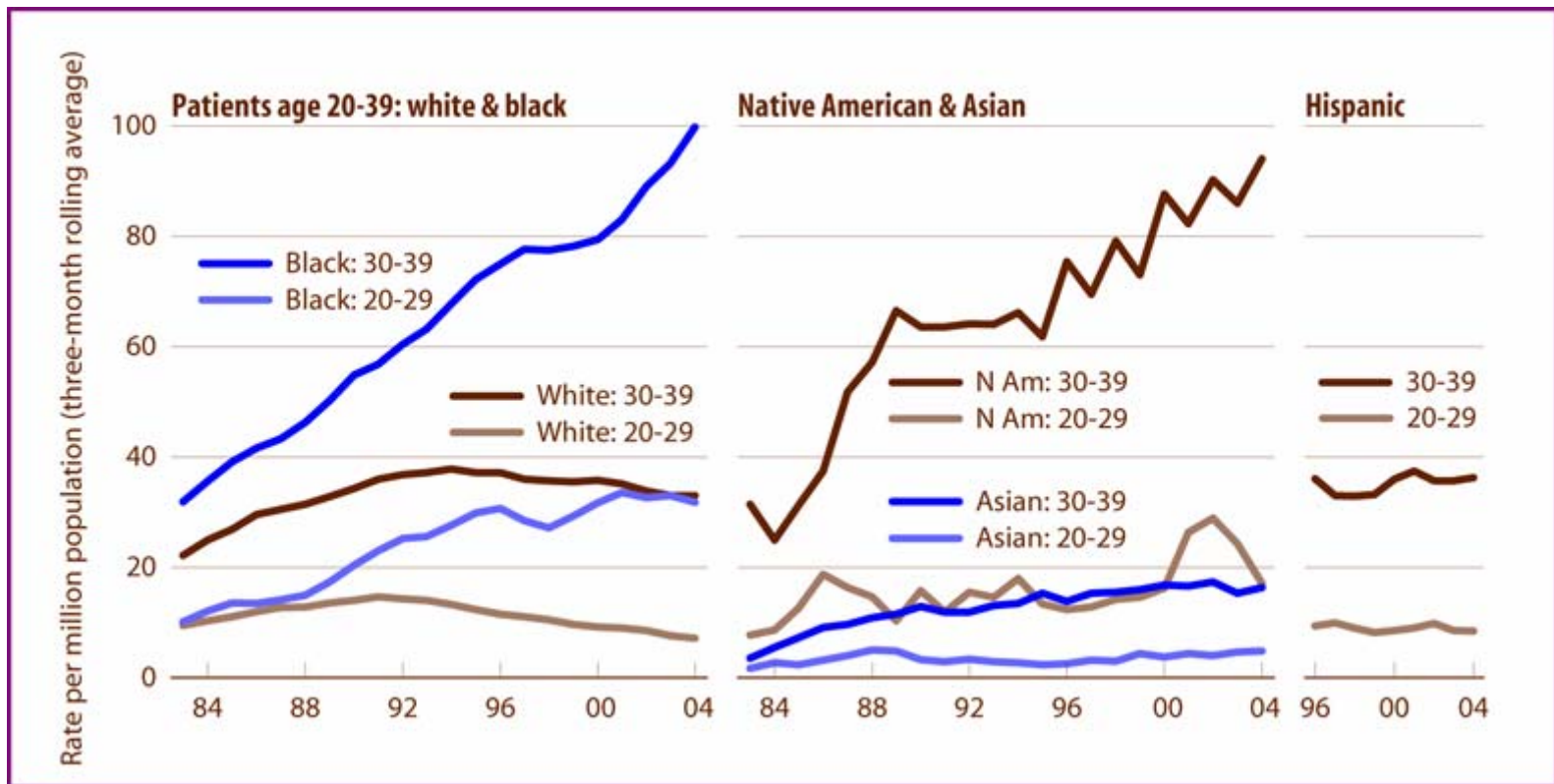
Figure 2.11



Incident ESRD patients. Rates adjusted for age, gender, & race.

Adjusted incident rates of ESRD due to diabetes, by age & race/ethnicity: age 20-39

Figure 2.12 (continued)



Incident ESRD patients, adjusted for gender.

CKD, CVD and ESRD

- The lower CVD death rates have not lead to more ESKD (so far)!
- In fact, the lower ESKD incidence rates are wide spread across all basic primary causes EXCEPT IN YOUNG AFRICAN AMERICANS with DM!
- AA have the largest representation in the manufacturing sector of the employed population yet their access to simple detection of CKD is poor!!!!

Public Health Initiatives in the US

- US congress authorized and funded CKD surveillance programs for the CDC
- CDC developed new ICD-9 CM codes to deal with CKD
 - CMS needed the new codes to address the high risk CKD payment system under Medicare Advantage
- CDC funded a developmental grant for CKD surveillance in the US
- CDC has begun an economic impact study of CKD on the health care system
- CDC has funded an economic impact study of CKD on the entire US economy to include premature loss of life, wages, taxes, family income, retirement and poverty
- CDC and NKDEP participate in the NKF KEEP steering committee
- The MWR report will promote World Kidney Day

CDC state level detection program for CKD: Focus on the interaction of CKD, DM and CVD

- **Designed to meet the Healthy People 2010 objectives to reduce the incidence of ESKD, and reduce the CVD death rates in the CKD population**
- **Detection program principles**
 - **Simple tests on targeted populations to teach providers to detect CKD in those with DM, HTN and CVD**
 - **Assess the burden of CVD, risk factor monitoring and Rx**
 - **Education programs for the public, providers and health plans to increase awareness**
 - **Assess provider practices to determine the intensity of education and detection programs needed to change provider behavior**
 - **Track death, CVD events and ESKD rates over time and merge this information with the surveillance system for CKD**

CKD detection effort in other countries

- **Kidney foundations and NGOs to advance the public awareness programs and detection efforts**
 - IFKF member countries to harmonize their CKD public health messages
 - ISN member societies to coordinate the CKD educational programs
 - Foundations and professional societies to collaborate to address the WKD message:
CKD is:
 - Common
 - Harmful
 - And treatable
- **Encourage WHO to address CKD as the morbidity and mortality multiplier disease for CVD and DM,**
 - provides a new public health initiative to address the world wide CVD and DM epidemic !
 - Re-energizes the long term public health agenda for DM and CVD

CKD and Public Health Policy

- **CKD is no longer an issue focused on ESKD**
- **CKD is more common than previously recognized and is a powerful risk multiplier for CVD and DM**
- **Developing and developed countries cannot just accept the high cost of ESKD but must address detection and prevention the major public health killer is:**

Cardiovascular Disease!