

# Diabetes Statistics from the CMS Chronic Conditions Warehouse (CCW)

---

Wendy Funk, M.S.  
Kennell and Associates

# Diabetes Statistics from the CMS Chronic Conditions Warehouse (CCW)

---

1. CMS CCW Data Dissemination Project
2. Diabetes Analytical File
3. Diabetes Statistics

# Diabetes Statistics from the CMS Chronic Conditions Warehouse (CCW)

---

- CMS CCW Data Dissemination Project
  - Project with CMS Office of Research, Development and Information (ORDI)
  - Kennell and Associates, Research Triangle Incorporated (RTI) and Iowa Foundation for Medical Care (IFMC)
  - Prepare chronic condition focused statistics for CMS, using the CCW.

# Diabetes Statistics from the CMS Chronic Conditions Warehouse (CCW)

---

- Approach
  - Among the 22 CCW conditions, selected diabetes as the first to study.
  - Conducted a comprehensive literature review to identify relevant statistics and emerging issues in care for diabetes.
  - Loaded CCW data onto a personal computer.
  - Combined enrollment and claims data to create a person-level analytical file to use to prepare diabetes statistics.
  - Generated statistics from analytical file

# Diabetes Statistics from the CMS Chronic Conditions Warehouse (CCW)

---

- Person Level Diabetes Analytical File
  - Encrypted Beneficiary ID & Demographics
  - Enrollment Information
  - Complication & Co-morbidity Flags
  - Utilization Statistics
  - Quality Indicator Variables
  - Cost Information

# Diabetes Statistics from the CMS Chronic Conditions Warehouse (CCW)

---

- Person Level Analytical File
  - Contains records for Medicare Fee For Service beneficiaries who have been identified as having diabetes
  - Working on expansion to incorporate all beneficiaries
    - With new coverage flags,
    - And additional years of data
- *Following examples prepared using the Diabetes Analytical File (from CCW data)*

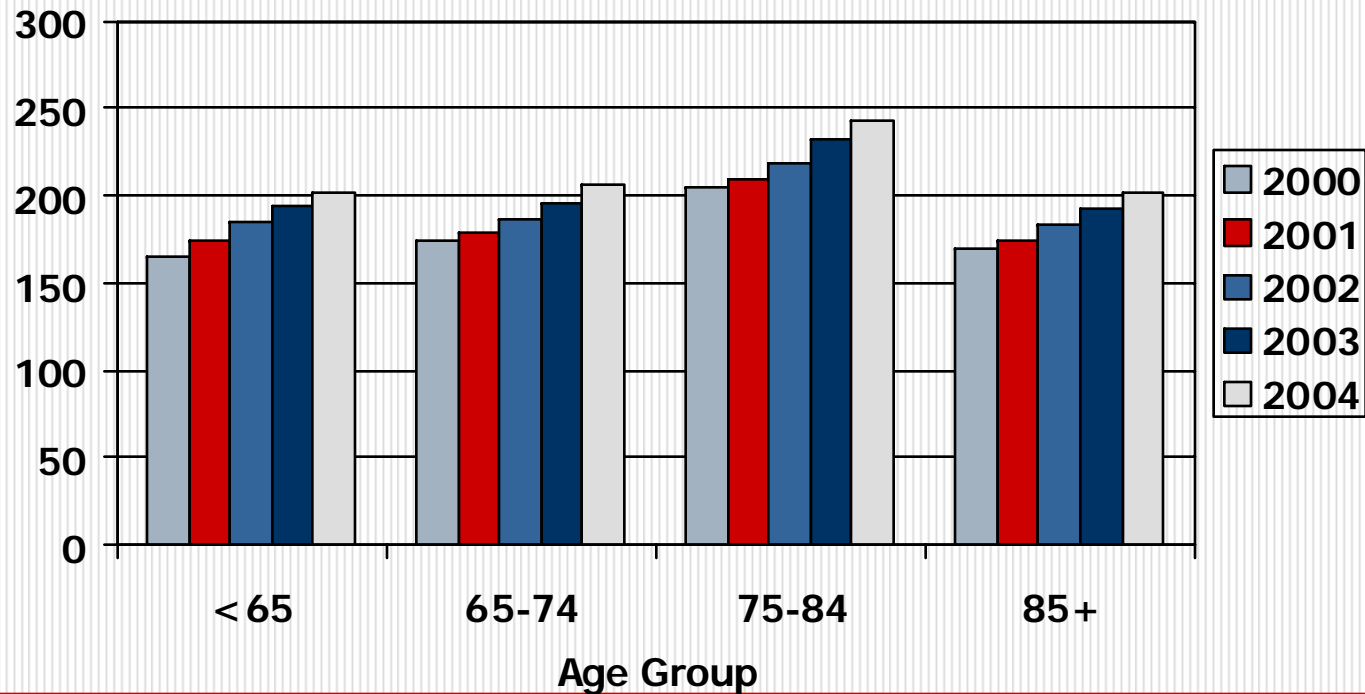
# Diabetes Statistics from the CMS Chronic Conditions Warehouse (CCW)

---

Claims Based Prevalence of Diabetes  
Co-Morbidities and Complications

# Overall Claims Based Diabetes Prevalence

Claims Based Prevalance of Diabetes per 1000 Medicare Fee for Service (FFS) Beneficiaries by Year and Age Group



Source: Diabetes Analytic File; prepared from CCW. Based on 5% sample.



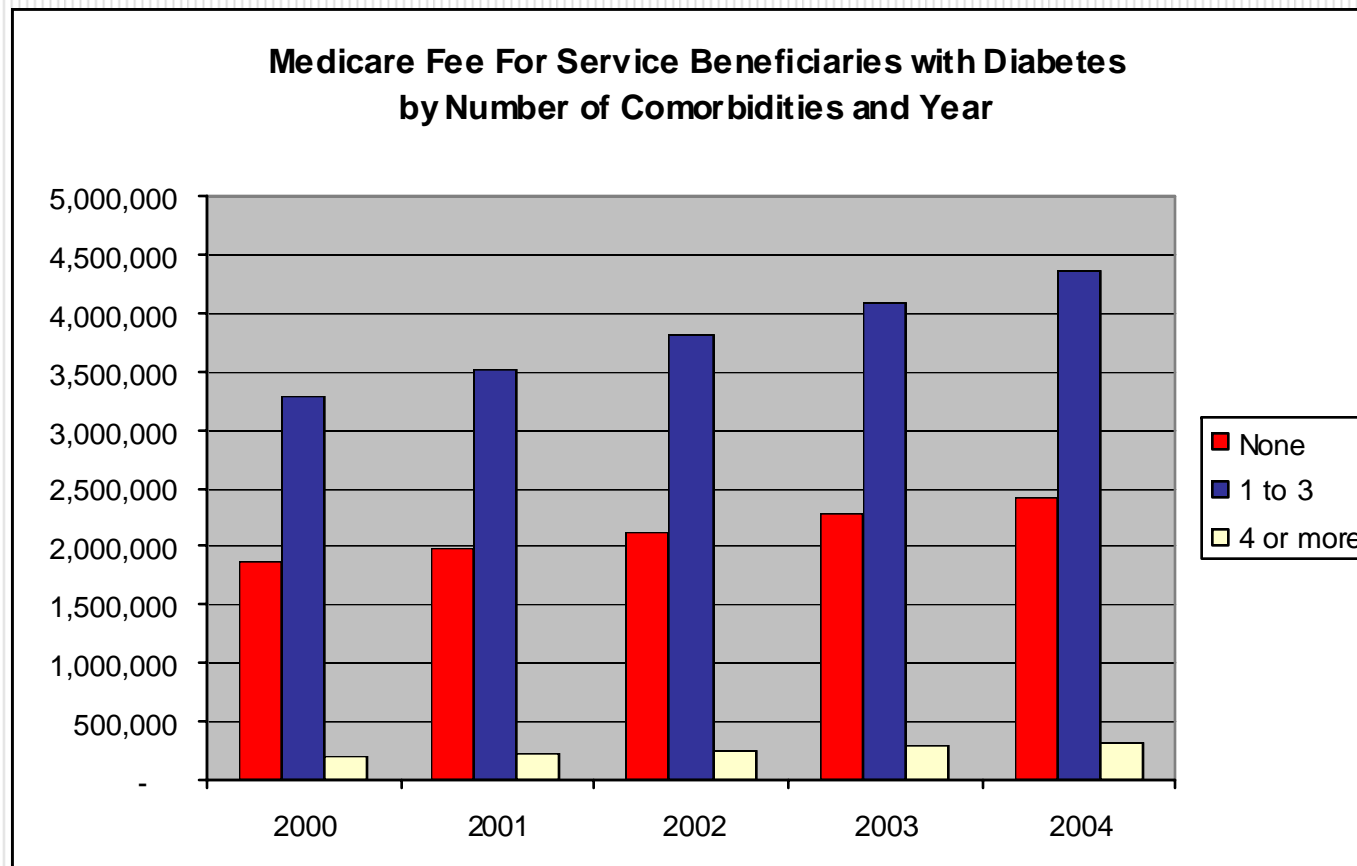
# Diabetes Statistics from the CMS Chronic Conditions Warehouse (CCW)

---

- Claims-based Prevalence Rates:  
Diabetes with co-morbidities
  - Major Depression
  - Heart Failure
  - Acute Myocardial Infarction
  - Chronic Kidney Disease
  - Ischemic Heart Disease
  - Stroke

# Diabetes with Co-Morbidities

---



Source: Diabetes Analytical File, prepared from CCW

Note: Based on 5% sample, extrapolated. Depression, Heart Failure, Stroke, Chronic Kidney Disease, AMI and Ischemic Heart Disease included in co-morbid conditions

# Diabetes Statistics from the CMS Chronic Conditions Warehouse (CCW)

---

## Transition to Complicated Diabetes

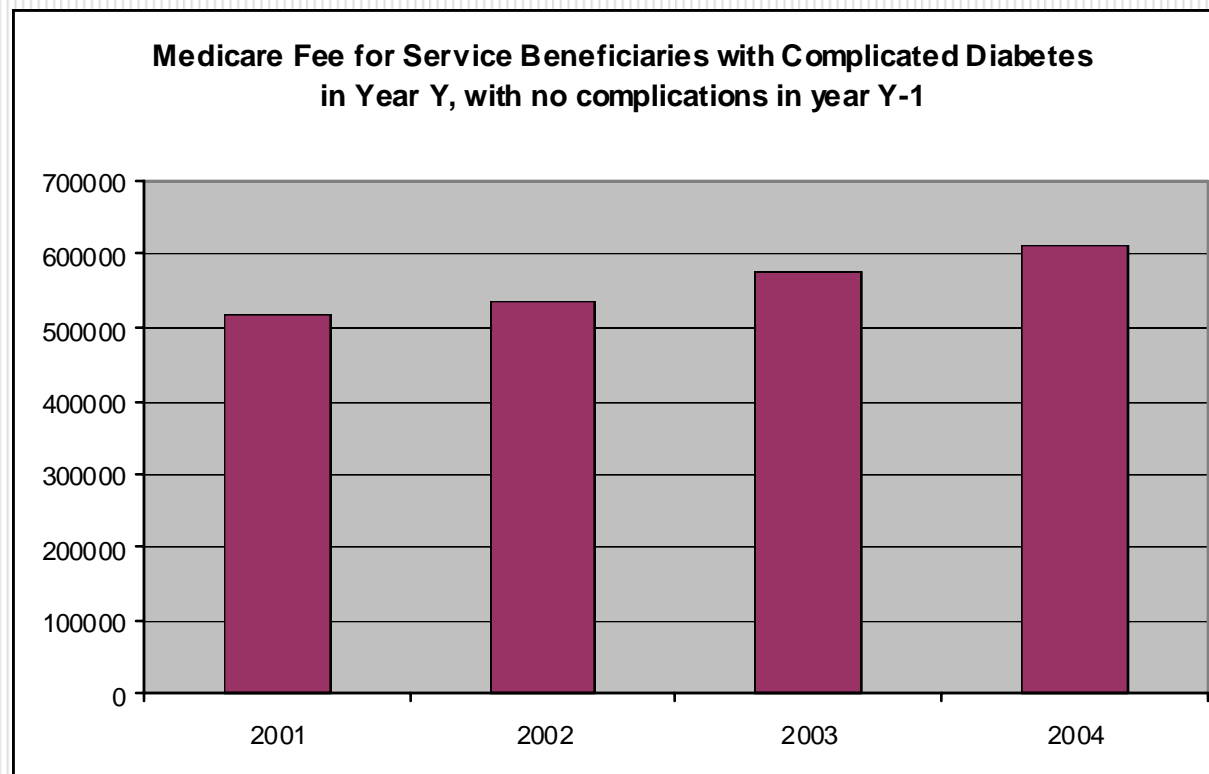
# Diabetes Statistics from the CMS Chronic Conditions Warehouse (CCW)

---

- Longitudinal data in CCW makes it easy to link across time
  - Beneficiary ID in CCW incorporates changes to Medicare HICN; allowing for easy unique identification and tracking across CCW Data Files
  - Diabetes Analytical File contains annual flags, to track changes over time.

# Transition to Complicated Diabetes

---



Source: Diabetes Analytical File, prepared from CCW

Note: Based on 5% sample, extrapolated. Complications included are: ketoacidosis, hyperosmolarity coma, other coma, neurological manifestations, ophthalmic manifestations, renal manifestations, circulatory manifestations, and other complications

# Diabetes Statistics from the CMS Chronic Conditions Warehouse (CCW)

---

## Quality Measures

# Diabetes Statistics from the CMS Chronic Conditions Warehouse (CCW)

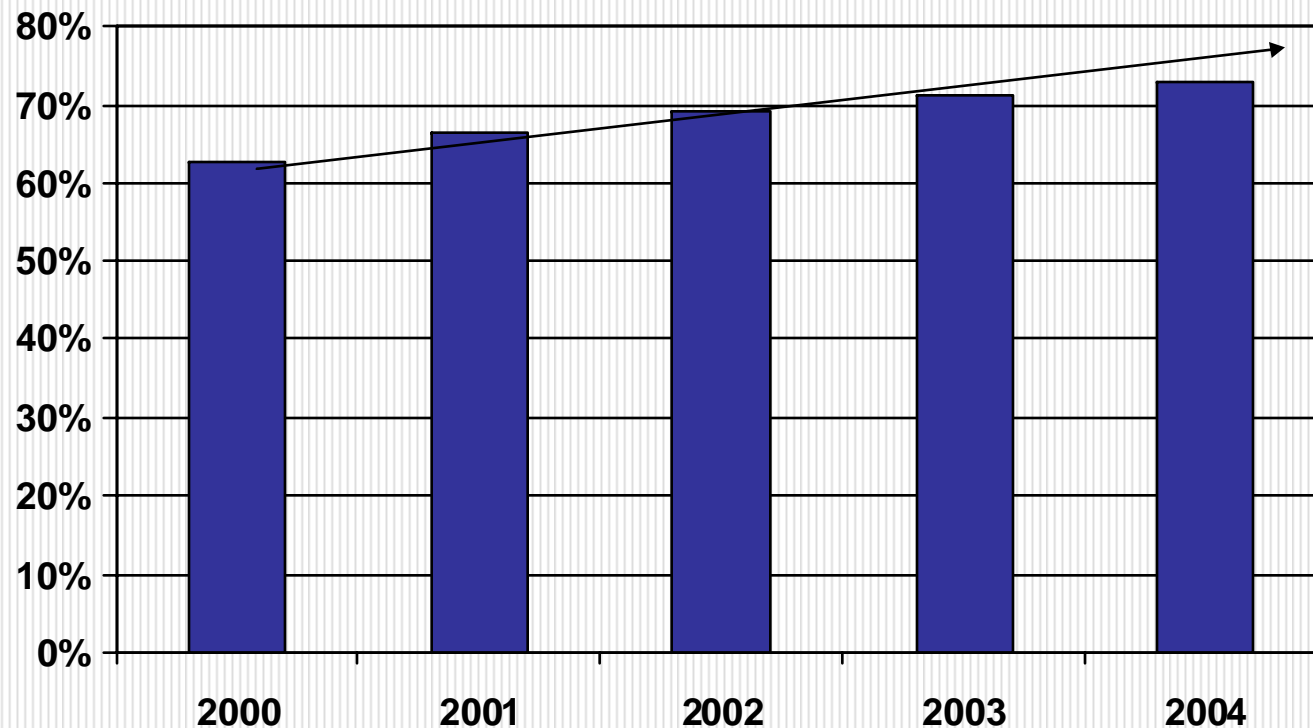
---

- Complete CMS data for each beneficiary
  - Linking across multiple data sources to look for marker events (i.e. evidence of a test)
- Diabetes Analytical File contains diabetes specific quality of care information:
  - HA1C testing, Urine Testing, Eye Exams, Hospitalizations, etc.

# Quality Measures – HA1C Exams

---

% of Medicare Full Fee for Service Beneficiaries with Diabetes Receiving an HA1C Exam, by Year



Source: Diabetes Analytic File; prepared from CCW

Note: Only those continuously enrolled in Part A and Part B for the year are included



# Diabetes Statistics from the CMS Chronic Conditions Warehouse (CCW)

---

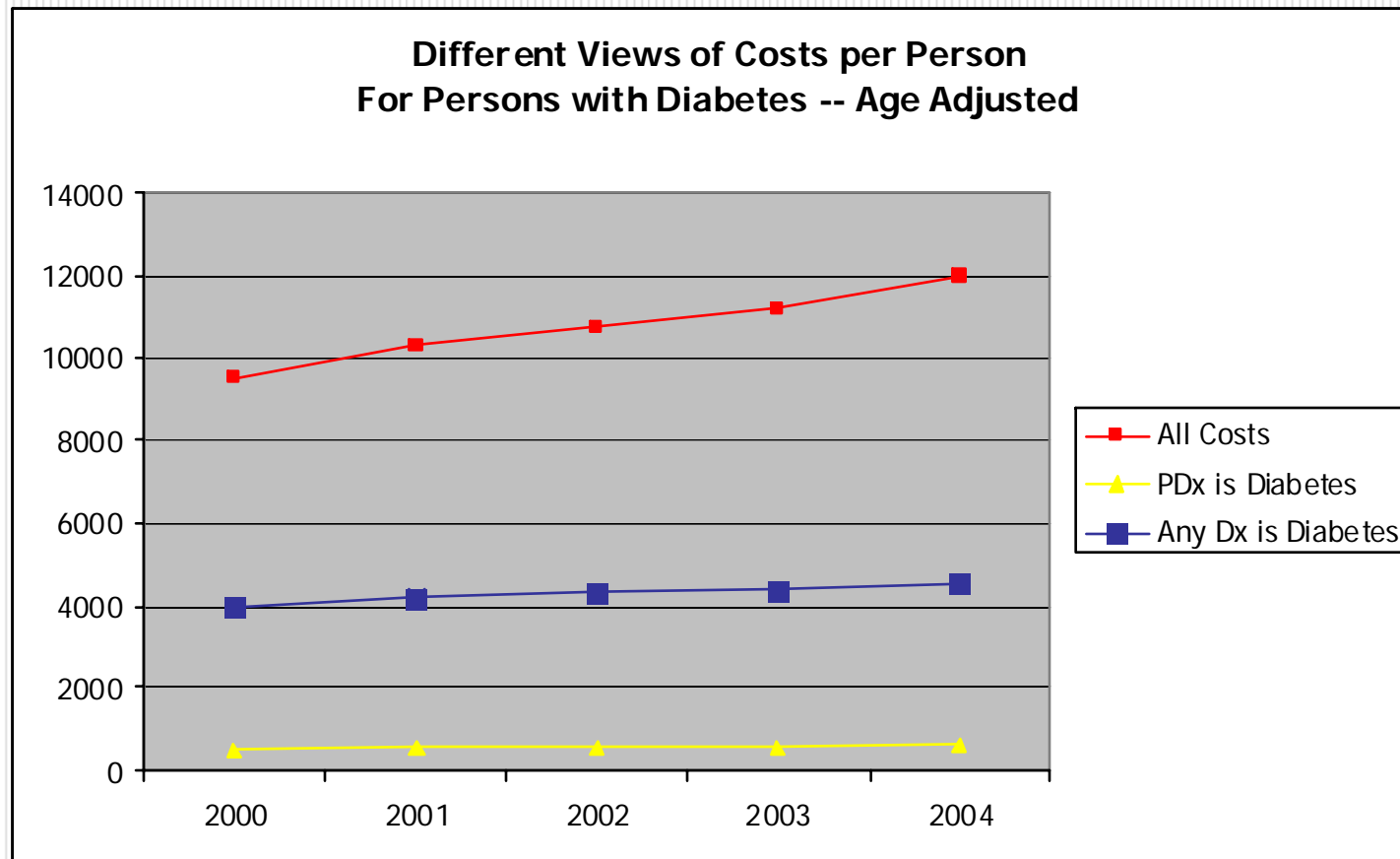
Costliness of Persons with Diabetes

# Diabetes Statistics from the CMS Chronic Conditions Warehouse (CCW)

---

- CCW contains claim-level payment information.
- Attribution of costs to a particular condition is **difficult**.
  - CCW can be used to develop inputs for complex models
- Simpler “accounting” methods can also easily be prepared from CCW & the diabetes analytical file:
  - Costs for persons with diabetes
  - Cost where primary diagnosis is diabetes
  - Cost where any diagnosis is diabetes

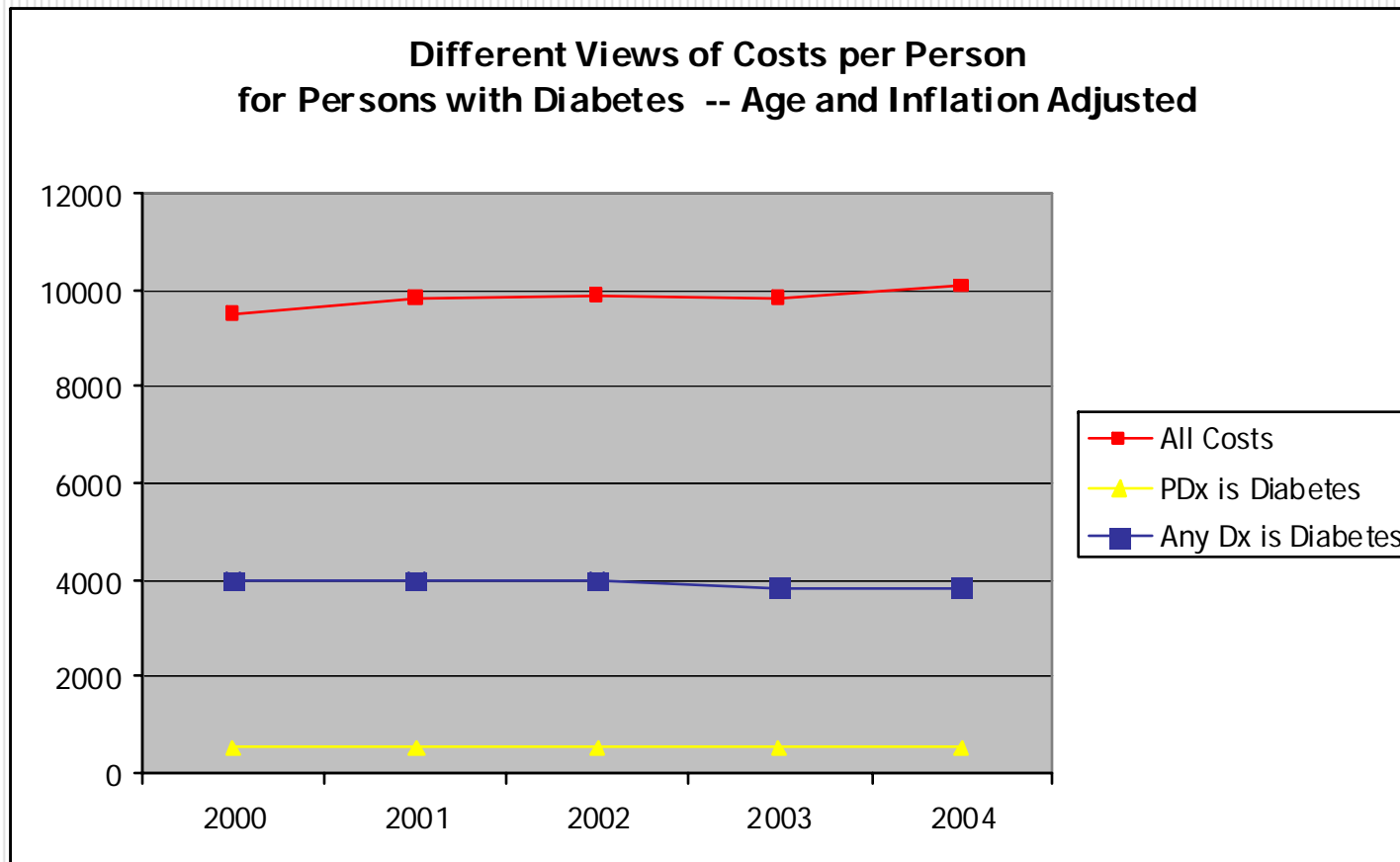
# Medicare Payments for FFS Enrollees with Diabetes



Source: Diabetes Analytic File; prepared from CCW

Note: Adjusted to CY 00 Standard Population

# Medicare Payments for FFS Enrollees with Diabetes



Source: Diabetes Analytic File; prepared from CCW. Excludes DME costs from DMEHRC file

Note: Adjusted to CY 00 Standard Population; BLS Medical CPI (Urban) used for inflation adjustment

# Diabetes Statistics from the CMS Chronic Conditions Warehouse (CCW)

---

- Next Steps
  - Enhance Diabetes Analytic File to include new coverage flags and years of data. Add in DME costs
  - Develop “Diabetes Program Statistics” for CMS
  - Next topics:
    - Heart Failure, Major Depression, Alzheimer’s Disease, & Stroke
    - Incorporate Survey and Assessment data into future condition focused analytic files.