**BDK10 Data Exercise**

**KEY**

You are provided an extract of a patient registry of 3001 patients with Diabetes Mellitus. The goal of the exercise is to calculate some healthcare quality measures from this data.

Data

The file contains 3000 records, one for each patient. Each record has fields for:

* patientid – identifier for patient
* gender – gender of patient
* birthdate – date of birth
* age – age in years
* pcp – primary care provider (PCP, numbered 1-10)
* race\_id – race code
* race – race
* icd9 – diabetes-related ICD-9-CM code
* labname – laboratory test (all HbA1C)
* labdate – date of HbA1C test (blank if no test)
* labvalue – result of HbA1C (blank if no test)

Exercises

For more information about the quality measures used here, see:

<http://www.qualityforum.org/Home.aspx>

<https://www.qualityforum.org/Projects/e-g/Endocrine_Consensus_Standards_Maintenance_and_Endorsement/Table_of_Endorsed_Measures.aspx>

Using the dataset, answer the following questions:

1. Determine which ICD-9 codes are present and how they are distributed among the patients, i.e. how many patients have each ICD-9 code in their record. Extra Credit: what do these ICD-9 codes stand for?

|  |  |  |
| --- | --- | --- |
| ICD-9 Code | Count | ICD-9 Code Description |
| 249.00 | 273 | SECONDARY DIABETES MELLITUS WITHOUT MENTION OF COMPLICATION, NOT STATED AS UNCONTROLLED, OR UNSPECIFIED |
| 250.00 | 2589 | DIABETES MELLITUS WITHOUT MENTION OF COMPLICATION, TYPE II OR UNSPECIFIED TYPE, NOT STATED AS UNCONTROLLED |
| 648.83 | 81 | ABNORMAL GLUCOSE TOLERANCE OF MOTHER ANTEPARTUM |
| 790.29 | 58 | OTHER ABNORMAL GLUCOSE |
| Total: | 3001 |  |

1. Calculate NQF 0057– HbA1C has been measured, i.e. how many (or what percentage of) patients with diabetes received an HbA1c test during the year?

Patients tested: 2568

Total patients: 3001

Percent tested: 85.57%

1. Calculate NQF 0575 – HbA1C for entire registry, i.e. for those who were tested, how many had an HbA1c level less than 8.0?

HbA1c < 8.0: 1298

Patients tested: 2568

Percent HbA1c < 8.0: 50.55%

1. Calculate NQF 0057–HbA1C and NQF 0575 – HbA1C for each PCP, i.e. for each PCP, how many patients were tested and of those tested, how many had an HbA1c level less than 8.0?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| PCP | Patients tested | Total patients | HbA1c < 8.0 | percent tested | percent HbA1c < 8.0 |
| 1 | 249 | 301 | 136 | 82.72% | 54.62% |
| 2 | 254 | 300 | 127 | 84.67% | 50.00% |
| 3 | 252 | 300 | 117 | 84.00% | 46.43% |
| 4 | 260 | 301 | 131 | 86.38% | 50.38% |
| 5 | 260 | 298 | 136 | 87.25% | 52.31% |
| 6 | 254 | 301 | 125 | 84.39% | 49.21% |
| 7 | 258 | 301 | 127 | 85.71% | 49.22% |
| 8 | 269 | 300 | 137 | 89.67% | 50.93% |
| 9 | 256 | 299 | 141 | 85.62% | 55.08% |
| 10 | 256 | 300 | 121 | 85.33% | 47.27% |
| Total: | 2568 | 3001 | 1298 | 85.57% | 50.55% |

1. Of patients tested, what was the average HbA1c level for the entire registry? For each PCP?

|  |  |  |
| --- | --- | --- |
| PCP | Patients tested | Avg HbA1c |
| 1 | 249 | 7.833137 |
| 2 | 254 | 7.909701 |
| 3 | 252 | 8.011766 |
| 4 | 260 | 7.966995 |
| 5 | 260 | 7.854768 |
| 6 | 254 | 7.930253 |
| 7 | 258 | 7.93433 |
| 8 | 269 | 7.851865 |
| 9 | 256 | 7.742321 |
| 10 | 256 | 7.986539 |
| Total: | 2568 | 7.901955 |