

Appendix A

Another Test of Coding Effects

Kronick and Welch (2014) specified a subset of ten HCC's that grew especially rapidly in MA relative to TM between 2004 and 2011, which they and we interpret as differential intensive coding by HCC in MA.^{i, ii} Our claims data come immediately after that period. If the suspected increase in coding intensity took place among lower risks within a given HCC category, any differential coding would lower observed cost functions for the HCC in MA relative to TM and expand the MA share of enrollees in that category. We therefore compared margins and MA shares in the subset of ten HCC's that grew rapidly relative to other HCC's. If the margins and shares are not very different, one can downgrade the importance of coding for our results, but if they favor MA, interpretation is ambiguous, meaning the difference is consistent with both production efficiencies and with differential coding.

For example, the first HCC of the 10 whose prevalence increased relatively rapidly in MA was HCC 52, Drug/alcohol dependence. Following Kronick and Welch, we included all instances of beneficiaries with a code of HCC 52 in the intensive coding group of HCC's, whether or not the claim included another HCC code. The 10 HCC codes with suspected differential coding intensity appeared in 79 groups of HCC codes in our data. We were interested in whether margins and shares were greater in MA in these categories. If they were not, it would indicate that coding was not a major factor in our results; if they were, it could be because of either production efficiencies or coding.

In fact, the HCC's whose share of MA enrollees increased rapidly from 2004 to 2011 had notably higher margins than the margins of other HCC's in our data and were also overrepresented in our MA data relative to TM (Tables A1 and A2). This is consistent with coding lower risk persons into these HCC's and so inflating margins, but it is also consistent with production efficiencies and selection. As mentioned in the text, the no HCC group is underrepresented in MA by 13 percentage points. One would expect it to have a relatively healthier mix of beneficiaries than the no HCC group in TM (on the assumption that the marginal person coded out of that group and into an HCC was sicker than others in that group) and so be relatively profitable, but in fact it is relatively unprofitable, 8 percentage points less than the overall mean (Table 5). When those with medical claims only are analyzed, the no HCC group is 7 percentage points more profitable than average (Table 10).

Table A1

Predicted Margins, HCC's Whose Share Increased Rapidly and Other HCC's, 2004-2011

	Number of HCC Groups	Weighted Mean Margin minus a constant	SE of Weighted Mean Margin	Difference of Top 10 and Other	SE of Difference of Top 10 and Other	2 sided p-value for difference
Top 10 HCC's*	79	-0.207	0.021	---	---	
Other HCC's	38	-0.393	0.011	0.187	0.024	<0.001

*These HCC's are those from Kronick and Welch (2014) and represent HCC's whose share of MA beneficiaries relative to TM expanded especially rapidly from 2004 to 2011 and thus HCC's where upcoding could be more prevalent.

Table A2

TM and MA Shares of HCC's Whose Share Increased Rapidly and Other HCC's, 2004-2011

	Number of HCC Groups	Share in MA	Share in TM
Top 10 HCC's*	55	17.0	6.6
Other HCC's	36	83.0	93.4

*There are only 91 HCC groups represented in Table A2 rather than the 117 shown in Table B1, because Table A2 only includes HCC groups that were in the top 100 in both MA and TM. To control for geography, these shares are weighted by the same inverse probability weights as Figure 1.

Appendix B

Appendix Table B1

**Margins by HCC Using Pooled Results for Both Insurers for Both Years,
Non-Group Business, Minus an Arbitrary Constant***

HCC1	HCC2	HCC3	Adjusted Margin	Unadjusted Margin
Disorders of Immunity			0.582	0.864
Diabetes with Renal or Peripheral Circulatory Manifestation	Polyneuropathy	Vascular Disease /Renal Failure**	0.487	0.497
Congestive Heart Failure	Renal Failure		0.343	0.252
Diabetes with Neurologic or Other Specified Manifestation	Polyneuropathy	Chronic Obstructive Pulmonary Disease	0.332	0.251
Diabetes without Complication	Congestive Heart Failure	Chronic Obstructive Pulmonary Disease	0.284	0.115
Major Depressive, Bipolar, and Paranoid Disorders	Vascular Disease		0.241	0.279
Diabetes with Renal or Peripheral Circulatory Manifestation	Polyneuropathy	Vascular Disease	0.222	0.169
Diabetes with Renal or Peripheral Circulatory Manifestation	Polyneuropathy	Renal Failure	0.212	0.263
Vascular Disease	Chronic Obstructive Pulmonary Disease	Renal Failure	0.186	0.247
Diabetes with Renal or Peripheral Circulatory Manifestation	Vascular Disease	Renal Failure	0.176	0.188
Vascular Disease	Renal Failure		0.130	0.128
Diabetes with Renal or Peripheral Circulatory Manifestation	Renal Failure		0.125	0.188
Major Depressive, Bipolar, and Paranoid Disorders	Renal Failure		0.115	0.189
Congestive Heart Failure	Specified Heart Arrhythmias	Renal Failure	0.099	0.010
Polyneuropathy	Renal Failure		0.053	0.010
Polyneuropathy	Vascular Disease		0.043	-0.002
Diabetes with Renal or	Polyneuropathy		0.022	-0.003

Peripheral Circulatory Manifestation				
Renal Failure			0.014	0.040
Specified Heart Arrhythmias	Renal Failure		-0.017	-0.062
Vascular Disease with Complications			-0.031	-0.063
Diabetes with Renal or Peripheral Circulatory Manifestation	Vascular Disease		-0.043	-0.097
Diabetes without Complication	Vascular Disease	Renal Failure	-0.047	-0.134
Cardio-Respiratory Failure and Shock			-0.048	-0.005
Diabetes with Renal or Peripheral Circulatory Manifestation			-0.067	-0.097
Congestive Heart Failure	Chronic Obstructive Pulmonary Disease		-0.072	-0.146
Chronic Ulcer of Skin, Except Decubitus			-0.079	-0.153
Diabetes with Neurologic or Other Specified Manifestation	Polyneuropathy		-0.082	-0.096
Lymphatic, Head and Neck, Brain, and Other Major Cancers	Diabetes without Complication		-0.083	-0.153
Diabetes with Neurologic or Other Specified Manifestation	Polyneuropathy	Vascular Disease	-0.083	-0.142
Diabetes without Complication	Renal Failure		-0.091	-0.119
Breast, Prostate, Colorectal and Other Cancers and Tumors	Diabetes with Ophthalmologic or Unspecified Manifestation		-0.099	-0.029
Diabetes without Complication	Congestive Heart Failure		-0.104	-0.174
Breast, Prostate, Colorectal and Other Cancers and Tumors	Renal Failure		-0.125	-0.128
Congestive Heart Failure	Vascular Disease		-0.135	-0.225
Diabetes without Complication	Ischemic or Unspecified Stroke		-0.141	-0.184
Diabetes with Neurologic or Other Specified Manifestation	Polyneuropathy	Renal Failure	-0.143	-0.232
Chronic Obstructive Pulmonary Disease	Renal Failure		-0.146	-0.122
Angina Pectoris/Old Myocardial Infarction	Renal Failure		-0.146	-0.178
Congestive Heart Failure	Angina Pectoris/Old Myocardial		-0.150	-0.245

	Infarction			
Drug/Alcohol Dependence			-0.155	0.000
Vascular Disease	Chronic Obstructive Pulmonary Disease		-0.174	-0.201
Diabetes without Complication	Vascular Disease	Chronic Obstructive Pulmonary Disease	-0.175	-0.243
Major Depressive, Bipolar, and Paranoid Disorders	Chronic Obstructive Pulmonary Disease		-0.183	-0.176
Ischemic or Unspecified Stroke	Vascular Disease		-0.185	-0.227
Diabetes with Neurologic or Other Specified Manifestation	Vascular Disease		-0.193	-0.305
Diabetes without Complication	Vascular Disease		-0.198	-0.254
Pancreatic Disease			-0.200	-0.206
Specified Heart Arrhythmias	Chronic Obstructive Pulmonary Disease		-0.204	-0.266
Seizure Disorders and Convulsions			-0.210	-0.257
Congestive Heart Failure	Specified Heart Arrhythmias	Chronic Obstructive Pulmonary Disease	-0.210	-0.269
Major Depressive, Bipolar, and Paranoid Disorders			-0.216	-0.172
Rheumatoid Arthritis and Inflammatory Connective Tissue Disease	Vascular Disease		-0.220	-0.294
Vertebral Fractures without Spinal Cord Injury			-0.222	-0.247
Intestinal Obstruction/Perforation			-0.222	-0.204
Congestive Heart Failure	Specified Heart Arrhythmias		-0.224	-0.298
Diabetes without Complication	Congestive Heart Failure	Specified Heart Arrhythmias	-0.239	-0.315
Specified Heart Arrhythmias	Vascular Disease		-0.245	-0.323
Diabetes without Complication	Major Depressive, Bipolar, and Paranoid Disorders		-0.246	-0.260
Diabetes with Ophthalmologic or Unspecified Manifestation			-0.248	-0.256
Diabetes without Complication	Chronic Obstructive Pulmonary Disease		-0.255	-0.296
Breast, Prostate, Colorectal and Other Cancers and Tumors	Congestive Heart Failure	Specified Heart Arrhythmias	-0.255	-0.362

Diabetes without Complication	Specified Heart Arrhythmias		-0.257	-0.313
Vascular Disease			-0.259	-0.305
Parkinsons and Huntingtons Diseases			-0.261	-0.302
Ischemic or Unspecified Stroke			-0.262	-0.331
Congestive Heart Failure			-0.269	-0.322
Rheumatoid Arthritis and Inflammatory Connective Tissue Disease	Renal Failure		-0.270	-0.274
Diabetes with Neurologic or Other Specified Manifestation			-0.273	-0.273
Polyneuropathy	Specified Heart Arrhythmias		-0.289	-0.342
Rheumatoid Arthritis and Inflammatory Connective Tissue Disease	Polyneuropathy		-0.291	-0.377
Polyneuropathy			-0.294	-0.307
Rheumatoid Arthritis and Inflammatory Connective Tissue Disease	Specified Heart Arrhythmias		-0.298	-0.349
Specified Heart Arrhythmias	Vascular Disease	Chronic Obstructive Pulmonary Disease	-0.301	-0.384
Specified Heart Arrhythmias			-0.302	-0.339
Diabetes without Complication	Polyneuropathy		-0.306	-0.335
Breast, Prostate, Colorectal and Other Cancers and Tumors	Diabetes without Complication	Vascular Disease	-0.307	-0.409
Diabetes without Complication	Specified Heart Arrhythmias	Vascular Disease	-0.309	-0.383
Rheumatoid Arthritis and Inflammatory Connective Tissue Disease	Chronic Obstructive Pulmonary Disease		-0.312	-0.359
Breast, Prostate, Colorectal and Other Cancers and Tumors	Specified Heart Arrhythmias		-0.313	-0.364
Angina Pectoris/Old Myocardial Infarction	Chronic Obstructive Pulmonary Disease		-0.320	-0.370
Angina Pectoris/Old Myocardial Infarction	Vascular Disease	Chronic Obstructive Pulmonary Disease	-0.330	-0.392
Breast, Prostate, Colorectal and Other Cancers and Tumors	Vascular Disease		-0.334	-0.391
Chronic Obstructive Pulmonary Disease			-0.348	-0.375

Diabetes without Complication	Rheumatoid Arthritis and Inflammatory Connective Tissue Disease		-0.352	-0.385
Congestive Heart Failure	Specified Heart Arrhythmias	Vascular Disease	-0.358	-0.436
Unstable Angina and Other Acute Ischemic Heart Disease			-0.360	-0.362
Cardio-Respiratory Failure and Shock	Chronic Obstructive Pulmonary Disease		-0.367	-0.395
Diabetes without Complication	Angina Pectoris/Old Myocardial Infarction	Vascular Disease	-0.373	-0.447
Lymphatic, Head and Neck, Brain, and Other Major Cancers			-0.373	-0.390
Metastatic Cancer and Acute Leukemia			-0.375	-0.397
Breast, Prostate, Colorectal and Other Cancers and Tumors	Rheumatoid Arthritis and Inflammatory Connective Tissue Disease		-0.376	-0.403
Polyneuropathy	Chronic Obstructive Pulmonary Disease		-0.382	-0.431
Angina Pectoris/Old Myocardial Infarction	Vascular Disease		-0.382	-0.435
Diabetes without Complication			-0.383	-0.375
Major Complications of Medical Care and Trauma			-0.389	-0.392
Rheumatoid Arthritis and Inflammatory Connective Tissue Disease			-0.393	-0.408
Diabetes without Complication	Angina Pectoris/Old Myocardial Infarction	Specified Heart Arrhythmias	-0.405	-0.478
Breast, Prostate, Colorectal and Other Cancers and Tumors	Chronic Obstructive Pulmonary Disease		-0.409	-0.430
Breast, Prostate, Colorectal and Other Cancers and Tumors	Polyneuropathy		-0.414	-0.443
No HCC			-0.421	-0.378
Breast, Prostate, Colorectal and Other Cancers and Tumors			-0.421	-0.421
Angina Pectoris/Old Myocardial Infarction	Specified Heart Arrhythmias		-0.429	-0.485

Congestive Heart Failure	Angina Pectoris/Old Myocardial Infarction	Specified Heart Arrhythmias	-0.439	-0.512
Breast, Prostate, Colorectal and Other Cancers and Tumors	Diabetes without Complication		-0.448	-0.460
Diabetes without Complication	Angina Pectoris/Old Myocardial Infarction		-0.459	-0.496
Breast, Prostate, Colorectal and Other Cancers and Tumors	Congestive Heart Failure		-0.461	-0.537
Angina Pectoris/Old Myocardial Infarction			-0.486	-0.518
Hip Fracture/Dislocation			-0.501	-0.541
Congestive Heart Failure	Vascular Disease	Chronic Obstructive Pulmonary Disease	-0.503	-0.630
Diabetes with Ophthalmologic or Unspecified Manifestation	Vascular Disease		-0.506	-0.577
Angina Pectoris/Old Myocardial Infarction	Specified Heart Arrhythmias	Vascular Disease	-0.518	-0.578
Breast, Prostate, Colorectal and Other Cancers and Tumors	Angina Pectoris/Old Myocardial Infarction		-0.525	-0.558
Inflammatory Bowel Disease			-0.565	-0.560
Congestive Heart Failure	Angina Pectoris/Old Myocardial Infarction	Vascular Disease	-0.600	-0.705
Diabetes without Complication	Congestive Heart Failure	Vascular Disease	-0.601	-0.693
Lung, Upper Digestive Tract, and Other Severe Cancers			-0.643	-0.672
Congestive Heart Failure	Angina Pectoris/Old Myocardial Infarction	Specified Heart Arrhythmias/ Vascular Disease**	-0.703	-0.792

*Margin is Revenue from HCC_i/Medical and Drug Cost of HCC_i - 1. An arbitrary constant has been subtracted from each value to preserve confidentiality.

**For these two rows only, there were four conditions that were coded; to save adding a column with all but two rows blank, we show both the third and fourth comorbidity in one cell.

Appendix Table B2

**Margins by HCC Using Pooled Results for Both Insurers for Both Years,
Group and Non-Group Business, Minus an Arbitrary Constant***

HCC1	HCC2	HCC3	With Drugs	Without Drugs
Diabetes with Renal or Peripheral Circulatory Manifestation	Polyneuropathy	Vascular Disease/Renal Failure**	0.600	1.130
Disorders of Immunity			0.516	0.603
Major Depressive, Bipolar, and Paranoid Disorders	Vascular Disease		0.453	0.667
Diabetes with Neurologic or Other Specified Manifestation	Polyneuropathy	Chronic Obstructive Pulmonary Disease	0.342	0.588
Congestive Heart Failure	Renal Failure		0.325	0.518
Diabetes without Complication	Congestive Heart Failure	Chronic Obstructive Pulmonary Disease	0.309	0.522
Diabetes with Renal or Peripheral Circulatory Manifestation	Polyneuropathy	Renal Failure	0.276	0.714
Diabetes with Renal or Peripheral Circulatory Manifestation	Polyneuropathy	Vascular Disease	0.274	0.561
Diabetes with Renal or Peripheral Circulatory Manifestation	Vascular Disease	Renal Failure	0.196	0.455
Congestive Heart Failure	Specified Heart Arrhythmias	Renal Failure	0.187	0.303
Diabetes with Renal or Peripheral Circulatory	Renal Failure		0.175	0.460

Manifestation				
Major Depressive, Bipolar, and Paranoid Disorders	Renal Failure		0.167	0.500
Cardio-Respiratory Failure and Shock			0.149	0.242
Vascular Disease	Renal Failure		0.131	0.318
Vascular Disease	Chronic Obstructive Pulmonary Disease	Renal Failure	0.120	0.248
Renal Failure			0.058	0.230
Polyneuropathy	Renal Failure		0.055	0.133
Diabetes without Complication	Vascular Disease	Renal Failure	0.048	0.197
Diabetes with Renal or Peripheral Circulatory Manifestation	Polyneuropathy		0.024	0.171
Diabetes with Neurologic or Other Specified Manifestation	Polyneuropathy	Renal Failure	0.013	0.189
Congestive Heart Failure	Chronic Obstructive Pulmonary Disease		0.010	0.155
Vascular Disease with Complications			0.003	0.066
Diabetes with Renal or Peripheral Circulatory Manifestation	Vascular Disease		-0.002	0.128
Vascular Disease	Chronic Ulcer of Skin, Except		-0.008	0.038

	Decubitus			
Diabetes with Neurologic or Other Specified Manifestation	Polyneuropathy		-0.025	0.168
Specified Heart Arrhythmias	Renal Failure		-0.029	0.092
Polyneuropathy	Vascular Disease		-0.038	0.098
Diabetes with Neurologic or Other Specified Manifestation	Polyneuropathy	Vascular Disease	-0.062	0.088
Diabetes with Renal or Peripheral Circulatory Manifestation			-0.069	0.070
Diabetes without Complication	Renal Failure		-0.073	0.071
Diabetes without Complication	Congestive Heart Failure		-0.076	0.015
Congestive Heart Failure	Vascular Disease		-0.082	-0.009
Congestive Heart Failure	Specified Heart Arrhythmias	Chronic Obstructive Pulmonary Disease	-0.083	0.026
Chronic Obstructive Pulmonary Disease	Renal Failure		-0.094	0.086
Ischemic or Unspecified Stroke	Vascular Disease		-0.099	-0.030
Pancreatic Disease			-0.101	-0.046
Angina Pectoris/Old Myocardial Infarction	Vascular Disease	Chronic Obstructive Pulmonary Disease	-0.112	0.027
Angina Pectoris/Old Myocardial Infarction	Renal Failure		-0.117	0.027
Chronic Ulcer of Skin,			-0.120	-0.078

Except Decubitus				
Diabetes without Complication	Vascular Disease	Chronic Obstructive Pulmonary Disease	-0.132	-0.042
Drug/Alcohol Dependence			-0.134	-0.096
Congestive Heart Failure	Angina Pectoris/Old Myocardial Infarction		-0.146	-0.056
Breast, Prostate, Colorectal and Other Cancers and Tumors	Renal Failure		-0.149	-0.054
Diabetes without Complication	Vascular Disease		-0.150	-0.061
Diabetes with Neurologic or Other Specified Manifestation	Vascular Disease		-0.150	-0.083
Specified Heart Arrhythmias	Vascular Disease		-0.160	-0.100
Diabetes with Ophthalmologic or Unspecified Manifestation	Renal Failure		-0.163	-0.027
Diabetes without Complication	Congestive Heart Failure	Specified Heart Arrhythmias	-0.167	-0.098
Specified Heart Arrhythmias	Vascular Disease	Chronic Obstructive Pulmonary Disease	-0.170	-0.073
Vascular Disease	Chronic Obstructive Pulmonary Disease		-0.175	-0.068
Vertebral Fractures without Spinal Cord Injury			-0.184	-0.113

Major Depressive, Bipolar, and Paranoid Disorders	Chronic Obstructive Pulmonary Disease		-0.186	-0.042
Breast, Prostate, Colorectal and Other Cancers and Tumors	Diabetes with Ophthalmologic or Unspecified Manifestation		-0.186	-0.126
Congestive Heart Failure	Specified Heart Arrhythmias		-0.191	-0.130
Ischemic or Unspecified Stroke			-0.191	-0.135
Diabetes without Complication	Ischemic or Unspecified Stroke		-0.191	-0.140
Diabetes without Complication	Specified Heart Arrhythmias	Vascular Disease	-0.200	-0.127
Diabetes without Complication	Chronic Obstructive Pulmonary Disease		-0.202	-0.098
Seizure Disorders and Convulsions			-0.202	-0.140
Parkinsons and Huntingtons Diseases			-0.203	-0.054
Lymphatic, Head and Neck, Brain, and Other Major Cancers	Diabetes without Complication		-0.203	-0.102
Specified Heart Arrhythmias	Chronic Obstructive Pulmonary Disease		-0.206	-0.095
Intestinal			-0.219	-0.177

Obstruction/Perforation				
Breast, Prostate, Colorectal and Other Cancers and Tumors	Diabetes without Complication	Vascular Disease	-0.219	-0.172
Congestive Heart Failure			-0.221	-0.164
Diabetes with Ophthalmologic or Unspecified Manifestation			-0.223	-0.119
Vascular Disease			-0.223	-0.175
Rheumatoid Arthritis and Inflammatory Connective Tissue Disease	Specified Heart Arrhythmias		-0.229	-0.138
Diabetes without Complication	Major Depressive, Bipolar, and Paranoid Disorders		-0.235	-0.065
Rheumatoid Arthritis and Inflammatory Connective Tissue Disease	Vascular Disease		-0.238	-0.176
Polyneuropathy	Specified Heart Arrhythmias		-0.240	-0.181
Major Depressive, Bipolar, and Paranoid Disorders			-0.244	-0.135
Diabetes with Neurologic or Other Specified Manifestation			-0.248	-0.136
Diabetes without Complication	Polyneuropathy		-0.248	-0.146
Rheumatoid Arthritis and Inflammatory Connective Tissue Disease	Renal Failure		-0.252	-0.145

Congestive Heart Failure	Specified Heart Arrhythmias	Vascular Disease	-0.254	-0.210
Breast, Prostate, Colorectal and Other Cancers and Tumors	Congestive Heart Failure	Specified Heart Arrhythmias	-0.261	-0.199
Diabetes without Complication	Specified Heart Arrhythmias		-0.261	-0.186
Diabetes without Complication	Angina Pectoris/Old Myocardial Infarction	Vascular Disease	-0.276	-0.201
Specified Heart Arrhythmias			-0.277	-0.216
Rheumatoid Arthritis and Inflammatory Connective Tissue Disease	Polyneuropathy		-0.283	-0.201
Breast, Prostate, Colorectal and Other Cancers and Tumors	Specified Heart Arrhythmias		-0.285	-0.232
Breast, Prostate, Colorectal and Other Cancers and Tumors	Vascular Disease		-0.297	-0.265
Polyneuropathy			-0.309	-0.244
Angina Pectoris/Old Myocardial Infarction	Chronic Obstructive Pulmonary Disease		-0.312	-0.215
Cardio-Respiratory Failure and Shock	Chronic Obstructive Pulmonary Disease		-0.314	-0.198
Rheumatoid Arthritis and Inflammatory Connective	Chronic Obstructive		-0.319	-0.214

Tissue Disease	Pulmonary Disease			
Chronic Obstructive Pulmonary Disease			-0.322	-0.252
Metastatic Cancer and Acute Leukemia			-0.325	-0.218
Breast, Prostate, Colorectal and Other Cancers and Tumors	Polyneuropathy		-0.326	-0.285
Diabetes with Ophthalmologic or Unspecified Manifestation	Vascular Disease		-0.327	-0.266
Angina Pectoris/Old Myocardial Infarction	Vascular Disease		-0.328	-0.274
Unstable Angina and Other Acute Ischemic Heart Disease			-0.330	-0.280
Diabetes without Complication	Rheumatoid Arthritis and Inflammatory Connective Tissue Disease		-0.331	-0.224
Breast, Prostate, Colorectal and Other Cancers and Tumors	Chronic Obstructive Pulmonary Disease		-0.349	-0.288
Angina Pectoris/Old Myocardial Infarction	Specified Heart Arrhythmias		-0.352	-0.295
Lymphatic, Head and Neck, Brain, and Other Major Cancers			-0.357	-0.290
Breast, Prostate, Colorectal and Other Cancers and	Rheumatoid Arthritis and		-0.358	-0.285

Tumors	Inflammatory Connective Tissue Disease			
Diabetes without Complication			-0.361	-0.298
Congestive Heart Failure	Angina Pectoris/Old Myocardial Infarction	Specified Heart Arrhythmias	-0.362	-0.314
Rheumatoid Arthritis and Inflammatory Connective Tissue Disease			-0.368	-0.278
Polyneuropathy	Chronic Obstructive Pulmonary Disease		-0.369	-0.303
Breast, Prostate, Colorectal and Other Cancers and Tumors	Diabetes without Complication		-0.381	-0.334
Hip Fracture/Dislocation			-0.385	-0.349
Breast, Prostate, Colorectal and Other Cancers and Tumors	Congestive Heart Failure		-0.394	-0.345
Breast, Prostate, Colorectal and Other Cancers and Tumors			-0.410	-0.383
Multiple Sclerosis			-0.424	0.012
No HCC			-0.426	-0.405
Major Complications of Medical Care and Trauma			-0.433	-0.405
Diabetes without Complication	Angina Pectoris/Old Myocardial		-0.448	-0.384

	Infarction			
Angina Pectoris/Old Myocardial Infarction			-0.451	-0.404
Breast, Prostate, Colorectal and Other Cancers and Tumors	Angina Pectoris/Old Myocardial Infarction		-0.508	-0.473
Lung, Upper Digestive Tract, and Other Severe Cancers			-0.516	-0.331
Inflammatory Bowel Disease			-0.522	-0.443

*Bolded cells indicate $p < 0.05$. Margin is Revenue from HCC_i/Cost of HCC_i - 1. An arbitrary constant has been subtracted from each value to preserve confidentiality.

**For this row only, there were four conditions that were coded; to save adding a column with all but two rows blanks, we show both the third and fourth comorbidity in one cell.

ⁱ Kronick and Welch (2014) show that the increase in risk scores differed widely across MA contracts, with the bottom 10% increasing at the rate of TM or lower and the top 10% increasing at 0.08 points per year (approximately 8%) above TM. The government does not release the identity of these contracts, however, so we cannot determine where the contracts of the insurers that we analyze are in the distribution.

ⁱⁱ The top 10 HCC's are: HCC 52, Drug/alcohol dependence; HCC 15, Diabetes, with peripheral or circulatory Manifestations; HCC 131, Renal failure; HCC 71, Polyneuropathy; HCC 83, Angina pectoris/old myocardial infarction; HCC 55, Major depressive, bipolar, and paranoid disorders; HCC 105, Vascular disease; HCC 108, Chronic obstructive pulmonary disease; HCC 100, Hemiplegia/hemiparesis; HCC 157 Vertebral fractures without spinal cord injury.