**Appendix 1：the results of robustness testing with propensity score matching**

**Table A1** Regression of independent variables on the logarithm of total expenditure after propensity score matching

|  |  |  |  |
| --- | --- | --- | --- |
| **Variable** | **Coefficient (SE)** | **Mean Change in Y per Unit of X** | **95% Conf. Interval** |
|  | OLS | GLS | OLS | GLS | OLS | GLS |
| **UEBMIS** | 0.0804\*\*(0.0323) | 0.0883\*\*(0.0354) | 0.0395 | 0.0436 | 0.0170 | 0.1437 | 0.0188 | 0.1578 |
| **URBMIS** | 0.0498(0.0338) | 0.0536(0.0362) | 0.0226 | 0.0246 | -0.0164 | 0.1160 | -0.0174 | 0.1247 |
| **NRCMS** | 0.1523\*\*\*(0.0354) | 0.1342\*\*\*(0.0357) | 0.0572 | 0.0484 | 0.0830 | 0.2216 | 0.0642 | 0.2042 |
| **FMS** | 0.7490\*\*\*(0.0717) | 0.7818\*\*\*(0.0550) | 0.1612 | 0.2678 | 0.6085 | 0.8895 | 0.6739 | 0.8897 |
| **ELSE** | -0.0855(0.1336) | -0.1082(0.1247) | -0.0057 | -0.0071 | -0.3473 | 0.1763 | -0.3526 | 0.1362 |
| **Chronic** | 0.0896\*\*\*(0.0329) | 0.0803\*\*(0.0366) | 0.0460 | 0.0415 | 0.0251 | 0.1542 | 0.0085 | 0.1521 |
| **UEBMISi** | 0.0892\*\*(0.0394) | 0.0988\*\*(0.0426) | 0.0349 | 0.0357 | 0.0119 | 0.1665 | 0.0153 | 0.1822 |
| **URBMISi** | 0.0988\*\*(0.0415) | 0.1025\*\*(0.0443) | 0.0346 | 0.0325 | 0.0175 | 0.1801 | 0.0157 | 0.1894 |
| **FMSi** | 0.0882(0.0787) | 0.0664(0.0578) | 0.0166 | 0.0206 | -0.0660 | 0.2424 | -0.0469 | 0.1796 |
| **NRCMSi** | 0.1099\*\*(0.0464) | 0.1267\*\*(0.0501) | 0.0310 | 0.0304 | 0.0189 | 0.2009 | 0.0284 | 0.2250 |
| **ELSEi** | 0.4830\*\*(0.2081) | 0.5831\*\*\*(0.2170) | 0.0206 | 0.0217 | 0.0751 | 0.8909 | 0.1579 | 1.0084 |
| **Age** | 0.0381\*\*\*(0.0022) | 0.0348\*\*\*(0.0022) | 0.6803 | 0.6469 | 0.0338 | 0.0424 | 0.0304 | 0.0391 |
| **Age^2** | -0.0003\*\*\*(0.0000) | -0.0002\*\*\*(0.0000) | -0.5113 | -0.4927 | -0.0003 | -0.0002 | -0.0003 | -0.0002 |
| **Gender** | -0.1478\*\*\*(0.0134) | -0.1237\*\*\*(0.0130) | -0.0757 | -0.0643 | -0.1740 | -0.1216 | -0.1493 | -0.0982 |
| **Rural** | -0.0255(0.0325) | -0.0146(0.0367) | -0.0114 | -0.0063 | -0.0892 | 0.0382 | -0.0865 | 0.0572 |
| **allergy** | 0.0868\*\*\*(0.0268) | 0.0846\*\*\*(0.0225) | 0.0222 | 0.0256 | 0.0343 | 0.1392 | 0.0406 | 0.1287 |
| **Emergency** | 0.1698\*\*\*(0.0177) | 0.1488\*\*\*(0.0183) | 0.0662 | 0.0549 | 0.1350 | 0.2045 | 0.1130 | 0.1846 |
| **\_cons** | 7.6796\*\*\*(0.0634) | 7.7472\*\*\*(0.0676) | . | . | 7.5554 | 7.8038 | 7.6147 | 7.8797 |
| **Adj R-squared** | 0.1074 | 0.1552 |  |
| **Prob > F**  | 0.0000 | 0.0000 |

**\*p < 0.1; \*\*p < 0.05; \*\*\*p < 0.01**

**Table A2** Results when the coefficient of the interaction terms is zero, i.e., the chronic illness impact on the total health expenditure of the various schemes

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **NRCMSi** | **UEBMISi** | **URBMISi** | **FMSi** |
|  | OLS | GLS | OLS | GLS | OLS | GLS | OLS | GLS |
| **F ( 1, 19716)** | 5.60\*\* | 6.38\*\* | 5.11\*\* | 5.38\*\* | 5.68\*\* | 5.35\*\* | 1.26 | 1.32 |

**\*p < 0.1; \*\*p < 0.05; \*\*\*p < 0.01**

**Table A3** Results of the F-test for chronic illness cases when the coefficients of the various insurance schemes are equal after propensity score matching

|  |  |  |  |
| --- | --- | --- | --- |
|  | **UEBMIS** | **URBMIS** | **FMS** |
|  | OLS | GLS | OLS | GLS | OLS | GLS |
| **NRCMS** | 0.28 | 0.47 | 0.07 | 0.32 | 0.08 | 1.14 |
| **UEBMIS** |  |  | 0.08 | 0.01 | 0.00 | 0.42 |
| **URBMIS** |  |  |  |  | 0.02 | 0.50 |

**\*p < 0.1; \*\*p < 0.05; \*\*\*p < 0.01**

**Table A4** Results of the F-test for nonchronic illness cases when the coefficients of the various insurance schemes are equal after propensity score matching

|  |  |  |  |
| --- | --- | --- | --- |
|  | **UEBMIS** | **URBMIS** | **FMS** |
|  | OLS | GLS | OLS | GLS | OLS | GLS |
| **NRCMS** | 2.78\* | 1.04 | 5.42\*\* | 3.15\* | 60.95\*\*\* | 113.30\*\*\* |
| **UEBMIS** |  |  | 1.65 | 2.72\* | 99.22\*\*\* | 227.98\*\*\* |
| **URBMIS** |  |  |  |  | 107.03\*\*\* | 247.70\*\*\* |

**\*p < 0.1; \*\*p < 0.05; \*\*\*p < 0.01**

**Appendix 2: diseases marked as “chronic disease” in the paper**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Chinese Name | English Name | Chinese Name | English Name | Chinese Name | English Name | Chinese Name | English Name |
| 肾移植术后服抗排异药 | Rejection after Renal Transplant | 皮质醇增多症 | Cushing's syndrome | 帕金森（氏）综合症 | Parkinson Syndrome | 肾病综合症 | Nephrotic syndrome |
| 股骨头坏死 | Femoral head necrosis | 风湿性心脏病 | Rheumatic heart disease | 恶性肿瘤放射治疗和化学治疗 | Malignant tumor radiation therapy and chemical treatment | 高血压三级极高危 | extremely risky hypertension |
| 运动神经元病 | Motor neuron disease | 原发性醛固酮增多症 | Primary aldosteronism | 银屑病 | psoriasis | 原发性血小板增多症（出血性血小板增多症） | Essential thrombocythemia (hemorrhagic thrombocythemia) |
| 慢性肾功能不全非透析治疗 | Chronic renal failure  | 慢性房颤 | Chronic atrial fibrillation | 类风湿性关节炎 | Rheumatoid arthritis | 慢性骨髓炎 | Chronic osteomyelitis |
| 心肌病（原发性） | Cardiomyopathy (essential) | 特发性紫癜 | Idiopathic purpura | 慢性阻塞性肺疾病（COPD） | Chronic obstructive pulmonary disease (COPD) | 消化性溃疡 | Peptic Ulcer |
| 甲亢性心脏病 | Hyperthyroid heart disease | 冠心病 | Coronary Heart Disease | 骨髓纤维化 | Myelofibrosis | 活动性结核病 | Active tuberculosis |
| 糖尿病 | diabetes | 真性红细胞增多症 | Polycythemia vera | 再生障碍性贫血 | Aplastic anemia | 阻塞性肺气肿 | Emphysema |
| 慢性中重度病毒性肝炎 | Chronic moderate and Severe viral hepatitis | 慢性肾炎及肾病综合征 | Chronic nephritis and nephrotic syndrome | 慢性肾功能衰竭 | Chronic renal failure | 慢性中（重）度病毒性肝炎白血病 | Chronic moderate and Severe viral leukemia |
| 强直性脊柱炎 | Ankylosing spondylitis | 皮肌炎 | Dermatomyositis | 甲状腺功能减退症 | Hypothyroidism | 结核 | tuberculosis |
| 高血压病 | High blood pressure | 肺间质性纤维化 | Interstitial lung fibrosis | 多发性硬化 | Multiple sclerosis | 脑血管病 | Cerebrovascular disease |
| 原发性血小板减少症 | Essential thrombocytopenia | 原发性慢性肾上腺皮质功能减退症 | Primary chronic adrenal hypofunction | 血友病（血友病A血友病B） | Hemophilia(A&B) | 白细胞减少症 | Leukopenia |
| 慢性肝炎 | Chronic hepatitis | 类风湿性关节炎（严重） | Rheumatoid arthritis (severe) | 精神分裂症 | Schizophrenia | 红斑狼疮 | Erythematosus |
| 系统性硬皮病 | Systemic scleroderma | 糖尿病并发症 | Diabetes Complications | 脑血管后遗症致神经功能缺损 | cerebral vascular sequelae induced neural functional defection | 慢性肺源性心脏病 | Chronic pulmonary heart disease |
| 慢性心功能衰竭、慢性心力衰竭 | Chronic heart failure | 骨髓增生异常综合症 | Myelodysplastic syndrome | 癫痫 | epilepsy | 心肌梗塞 | myocardial infarction |
| 重症肌无力 | Myasthenia Gravis | 再生障碍性贫血 | Aplastic anemia | 心脏换瓣膜术后 | Heart change valve surgery | 多发性骨髓瘤 | Multiple myeloma |
| 肝硬化 | Cirrhosis | 慢性肾小球肾炎 | Chronic glomerulonephritis | 甲状腺功能亢进症（Graves病） | graves’ disease | 血小板减少性紫癜 | Thrombocytopenic purpura |
| 器官移植后服抗排异药 | Rejection after organ Transplant | 尿毒症 | Uremia  | 震颤麻痹 | Parkinsonism | 原发性血小板减少性紫癜 | Idiopathic thrombocytopenic purpura |