

## **Temporal Trends of Aortic Stenosis and comorbid Chronic Kidney Disease in the Province of Quebec, Canada**

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**LEGEND OF SUPPLEMENTARY APPENDIX**

**Table S1.** List of codes used for identifying aortic stenosis<sup>1</sup>

**Table S2.** List of codes used for identifying dialysis patients

**Table S3.** List of codes used for identifying pre-dialysis patients

**Table S4.** List of codes used for Combined Comorbidity Index of Charlson and Elixhauser

**Table S1.** List of codes used for identifying aortic stenosis<sup>1</sup>

| ICD-9   | ICD-10-CA   |
|---|---|
| 395.0, 395.2, 395.9, 396.90, 396.92, 396.98, 396.99, 424.1, 746.3 | I06.0, I06.2, I06.8, I06.9, I08.0, I08.2, I08.3, I35.0, I35.2, I35.9, I39.1, Q23.0, Q23.9 |

<sup>1</sup>Aortic stenosis' cases were identified in the hospitalization databases with ICD-9CM or ICD-10-CA as primary or secondary diagnosis

**Table S2.** List of codes used for dialysis patients<sup>2</sup>

| Physician billing claims <sup>3,4</sup>   | Description  |
|---|--|
| 00283, 00284, 00285, 09257, 09258, 09259, 09260   | Peritoneal dialysis treatment visits, including all care, per patient      |
| 15035, 15040  | Supervision of peritoneal dialysis treatment at home, by month, by patient |
| 00287, 00288, 00290, 00147, 09261, 09263, 09264, 09274, 15041, 15043, 15045, 15047, 15722 | Hemodialysis treatment visits, including all care, per patient             |
| 15050, 15051  | Supervision of hemodialysis treatment at home, by month, by patient        |

ICD-9, International Classification of Diseases, 9th Revision; ICD-10-CA, International Classification of Diseases, 10<sup>th</sup> Revision with Canadian enhancement

<sup>2</sup>Dialysis subgroup needed to have at least two outpatient physician billing codes  $\geq 90$  days apart associated with any visit or supervision for dialysis in the two years prior to the index date with at least one of these codes appearing within previous year of the index date.

<sup>3</sup><https://www.ramq.gouv.qc.ca/SiteCollectionDocuments/professionnels/manuels/syra/medecins-omnipraticiens/100-facturation-omnipraticiens/manuel-omnipraticiens-remuneration-acte-RFP.pdf>

<sup>4</sup><https://www.ramq.gouv.qc.ca/fr/professionnels/medecins-specialistes/manuels/Pages/remuneration-acte.aspx>

**Table S3.** List of codes used for pre-dialysis patients<sup>5</sup>

| ICD-9               | ICD-10-CA   | Description                          |
|---------------------|-------------|--------------------------------------|
| 403.0, 403.1, 403.9 | I12.0       | Hypertensive renal disease           |
| 404.0, 404.1, 404.9 | I13.1       | Hypertensive heart and renal disease |
| 582.x               | N03.2-N03.7 | Chronic nephritic syndrome           |
| 583.0-583.7         | N05.2-N05.7 | Unspecified nephritic syndrome       |

|       |       |                            |
|-------|-------|----------------------------|
| 585.x | N18.x | Chronic kidney disease     |
| 586.x | N19.x | Unspecified kidney failure |
| 588.0 | N25.0 | Renal osteodystrophy       |

ICD-9, International Classification of Diseases, 9th Revision; ICD-10-CA, International Classification of Diseases, 10<sup>th</sup> Revision with Canadian enhancement

<sup>5</sup>Pre-dialysis subgroup needed at least one hospital diagnosis code in any field related to CKD in the two years prior to the index date, or at least two physician billing diagnostic codes  $\geq 30$  days apart of CKD in the two years prior to the index date with at least one of these claims appearing within previous year of the index date

**Table S4.** List of codes used for Combined Comorbidity Index of Charlson and Elixhauser<sup>6</sup>

| Comorbidities                   | ICD-9   | ICD-10-CA  |
|---------------------------------|---|--|
| Hypertension                    | 401.x, 402.x–405.x, 437.2   | I10.x, I11.x–I13.x, I15.x, I67.4   |
| Chronic pulmonary disease       | 490x–505.x, 506.4, 508.1, 508.8   | I27.8, I27.9, J40.x– J47.x, J60.x–J64.x, J65.x, J66.x, J67.x, J68.4, J70.1, J70.3                                |
| Cardiac arrhythmias             | 426.0, 426.10, 426.12, 426.13, 426.7, 426.9, 427.0– 427.4, 427.6–427.9, 785.0, 996.01, 996.04, V45.0, V53.3 | I44.1–I44.3, I45.6, I45.9, I47.x–I49.x, R00.0, R00.1, R00.8, T82.1, Z45.0, Z95.0                                 |
| Diabetes, uncomplicated         | 250.0–250.2, 250.3  | E10.0, E10.1, E10.9, E11.0, E11.1, E11.9, E13.0, E13.1, E13.9, E14.0, E14.1, E14.9                               |
| Deficiency anemia               | 280.1–280.9, 281.x, 285.9   | D50.1, D50.8, D50.9, D51.x–D53.x, D63.x, D64.9   |
| Any tumor without metastasis    | 140.x–172.x, 174.x, 175.x, 179.x–195.x, 200.x, 201.x, 202.x, 203.0, 238.6, 273.3                            | C00.x–C26.x, C30.x– C34.x, C37.x–C41.x, C43.x, C45.x–C58.x, C60.x–C76.x, C81.x–C85.x, C88.x, C90.0, C90.2, C96.x |
| Hypothyroidism                  | 240.9, 243.x, 244.x, 246.1, 246.8   | E00.x, E01.x, E02.x, E03.x, E89.0  |
| Fluid and electrolyte disorders | 253.6, 276.x  | E22.2, E86.x, E87.x  |
| Peripheral vascular disorders   | 093.x, 440.x, 441.x, 443.1–443.9, 447.1, 557.1, 557.9, V43.4  | A52.0, I70.x, I71.x, I72.x, I73.0, I73.1, I73.8, I73.9, I77.1, I79.0,  |

|                                 |  |  |
|---------------------------------|--|--|
|                                 |  | K55.1, K55.8, K55.9, Z95.8, Z95.9  |
| Myocardial infarction           | 410.x, 412.x   | I21.x, I22.x, I25.2  |
| Congestive heart failure        | 398.91, 402.01, 402.11, 402.91, 404.01, 404.03, 404.11, 404.13, 404.91, 404.93, 428.x                                | I09.9, I11.0, I13.0, I13.2, I25.5, I42.0, I42.5–I42.9, I43.x, I50.x, P29.0   |
| Obesity                         | 278.0  | E66.x  |
| Valvular disease, other than AS | 394.x, 395.1, 396.8, 396.9, 397.x, 424.0, 424.2, 424.3, 424.9, 746.4, 746.5, 746.6, V42.2, V43.3                     | I05.x, I06.1, I07.x, I08.1, I08.8, I08.9, I09.1, I09.8, I34.x, I35.1, I35.8, I36.x, I37.x, I38.x, I39.0, I39.2, I39.3, I39.8, I39.9, Q23.1, Q23.2, Q23.3, Q23.8, Z95.2, Z95.3      |
| Metastatic cancer               | 196.x–199.x  | C77.x–C79.x, C80.x   |
| Dementia                        | 290.x, 294.1, 331.0, 331.2   | F00.x–F03.x, F05.1, G30.x, G31.1   |
| Cerebrovascular disease         | 362.34, 430.x–438.x  | G45.x, G46.x, I60.x–I69.x  |
| Depression                      | 296.2, 296.3, 296.5, 300.4, 309.x, 311.x   | F20.4, F31.3–F31.5, F32.x, F33.x, F34.1, F41.2, F43.2  |
| Neurological disorders          | 331.9, 332.0, 332.1, 333.4, 333.5, 333.92, 334.x–335.x, 336.2, 340.x, 341.x, 345.x, 348.1, 348.3, 780.3, 784.3       | G10.x–G12.x, G13.x, G20.x, G21.x–G22.x, G25.4, G25.5, G31.2, G31.8, G31.9, G32.x, G35.x, G36.x, G37.x, G40.x, G41.x, G93.1, G93.4, R47.0, R56.x                                    |
| Alcohol abuse                   | 265.2, 291.1–291.3, 291.5–291.9, 303.x, 305.0, 357.5, 425.5, 535.3, 571.0–571.3, 980.x, V11.3                        | F10.x, E52.x, G62.1, I42.6, K29.2, K70.0, K70.3, K70.9, T51.x, Z50.2, Z71.4, Z72.1   |
| Liver disease                   | 070.22, 070.23, 070.2b, 070.32, 070.33, 070.44, 070.54, 456.0–456.2, 571.x, 572.3, 572.8, 573.3, 573.4, 573.9, V42.7 | B18.x, I85.x, I86.4, I98.2, K70.0–K70.3, K70.9, K71.1, K71.3–K71.5, K71.6, K71.7, K72.1, K72.9, K73.x, K74.x, K75.4, K76.0, K76.1, K76.3, K76.4, K76.5, K76.6, K76.8, K76.9, Z94.4 |
| Diabetes, complicated           | 250.4–250.9  | E10.2–E10.8, E11.2–E11.8, E13.2–E13.8, E14.2–E14.8   |
| Psychoses                       | 293.8, 295.x, 296.04, 296.14, 296.44, 296.54, 297.x, 298.x   | F20.x, F22.x–F25.x, F28.x, F29.x, F30.2, F31.2, F31.5  |

|  |   |  |
|--|---|--|
| Pulmonary circulation disorders  | 415.0, 415.1, 416.x, 417.0, 417.8, 417.9  | I26.x, I27.x, I28.0, I28.8, I28.9  |
| Rheumatoid arth./collagen vascular disease                                     | 136.1, 446.x, 701.0, 710.0–710.4, 710.5, 710.8, 710.9, 711.2, 714.x, 719.3, 720.x, 725.x, 728.5, 728.89, 729.30 | L90.0, L94.0, L94.1, L94.3, M05.x, M06.x, M08.x, M12.0, M12.3, M30.x, M31.x, M32.x–M35.x, M45.x, M46.0, M46.1, M46.8, M46.9x |
| Coagulopathy   | 286.x, 287.1, 287.3–287.5   | D65–D68.x, D69.1, D69.3–D69.6  |
| Weight loss  | 260.x–263.x, 783.2, 799.4   | E40.x–E46.x, R63.4, R64.x  |
| Drug abuse   | 292.x, 304.x, 305.2–305.9, V65.4  | F11.x–F16.x, F18.x–F19.x, Z71.5, Z72.2   |
| Paralysis  | 334.1, 342.x, 343.x, 344.0, 344.1, 344.2, 344.3, 344.4, 344.5, 344.6, 344.8, 344.9                              | G04.1, G11.4, G80.x, G81.x, G82.x, G83.x   |
| Blood loss anemia  | 280.0   | D50.0  |
| Ulcer disease  | 531.x–534.x   | K25.x–K28.x  |
| Acquired immunodeficiency syndrome (AIDS) / human immunodeficiency virus (HIV) | 042.x–044.x   | B20.x–B24.x  |

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<sup>6</sup>Patients were considered to have a comorbidity if there was at least one hospital diagnosis code recorded in any fields at the index date or in the two years prior to the index date, or two physician claims diagnosis codes  $\geq 30$  days apart recorded in the two years prior to the index date; with at least one of these claims appearing within one year of the index.