

Supplemental material

Table S1 Codes used to identify patients and specialist visits

| Category | Medicare claims file and variable | Codes |
|---|--|---|
| Specialist visits | | |
| | Healthcare Common Procedure Coding System codes in outpatient and carrier files | 99201-99215, 99241-99245, 99381-99387, 99391-99397, 99441-99443, G0438-G0439, G0406-G0408, G2010, G2012 |
| | Provider specialty in outpatient and carrier files | 02, 03, 04, 05, 06 (grouped together with C3 and 78 for cardiology), 07, 09, 10, 13, 14, 16, 17, 18, 20, 21, 23, 24, 25, 26 (grouped together with 27 and 86 for psychiatry), 28, 29, 33, 34, 39, 40, 44, 46, 48, 66, 72, 76, 77, 79, 81, 82 (grouped together with 83 for hematology/oncology), 85, 86, 90, 91, 92, 94, 98, C0, C7, C9 |
| | Revenue center in outpatient files | 0490, 0499, 0500, 0509-0531, 0539, 0780, 0789 |
| | Place of service in carrier files | 02, 05-08, 11, 17, 19-20, 22, 24, 26, 31-33, 49, 50, 53, 57, 71-72 |
| Generalist visits | | |
| | Healthcare Common Procedure Coding System codes in outpatient and carrier files | 99201-99215, 99241-99245, 99304-99310, 99315-99316, 99318, 99381-99387, 99391-99397, G0438-G0439, G9685 |
| | Provider specialty in outpatient and carrier files | Physicians: 01, 08, 11, 38, C6 Nurse practitioners: 50 Physician assistants: 97 |
| | Revenue center in outpatient files | 0490, 0499, 0500, 0509-0531, 0539, 0780, 0789 |
| | Place of service in carrier files | 02, 05-08, 11, 17, 19-20, 22, 24, 26, 31-33, 49, 50, 53, 57, 71-72 |
| Patient groups with specific diagnoses | | |
| | Diagnoses in Medicare Provider Analysis and Review, inpatient, outpatient, carrier files | Parkinson's disease – G20 (ICD-9), 3320 (ICD-10) Multiple sclerosis – G35 (ICD-9), 340 (ICD-10) Rheumatoid or psoriatic arthritis – M05, L405 (ICD-9), 714, 9690 (ICD-10) Cancer – C (ICD-9), 14-19 (ICD-10) |
| | Chronic Conditions Data Warehouse flags for chronic or potentially disabling conditions in Master Beneficiary Summary File | Severe mental illness – Bipolar disorder; schizophrenia and other psychotic disorders Epilepsy – Epilepsy Heart failure – Heart failure |

| | | |
|--|--|---|
| | | <p>Liver disease and cirrhosis – Liver disease, cirrhosis, and other liver conditions (excluding hepatitis)</p> <p>Alzheimer’s disease and other dementias – Alzheimer’s disease and related disorders or senile dementia</p> <p>Developmental disorders – Autism spectrum disorders; Cerebral palsy; Intellectual disabilities and related disorders; Learning disabilities; Muscular dystrophy; Other developmental delays; Spina bifida and other congenital anomalies of the nervous system</p> |
|--|--|---|

ICD-9 – International Classification of Diseases, Ninth Revision; ICD-10 – International Classification of Diseases, Tenth Revision.

Figure S1 Count of specialist visits among the previous specialty care users before and after transition to a nursing home
 A – Relative change in the number of specialist visits among the previous users from 12 months before to 12 months after the transition to a nursing home
 B – Monthly specialist visits among the previous users of specialty care

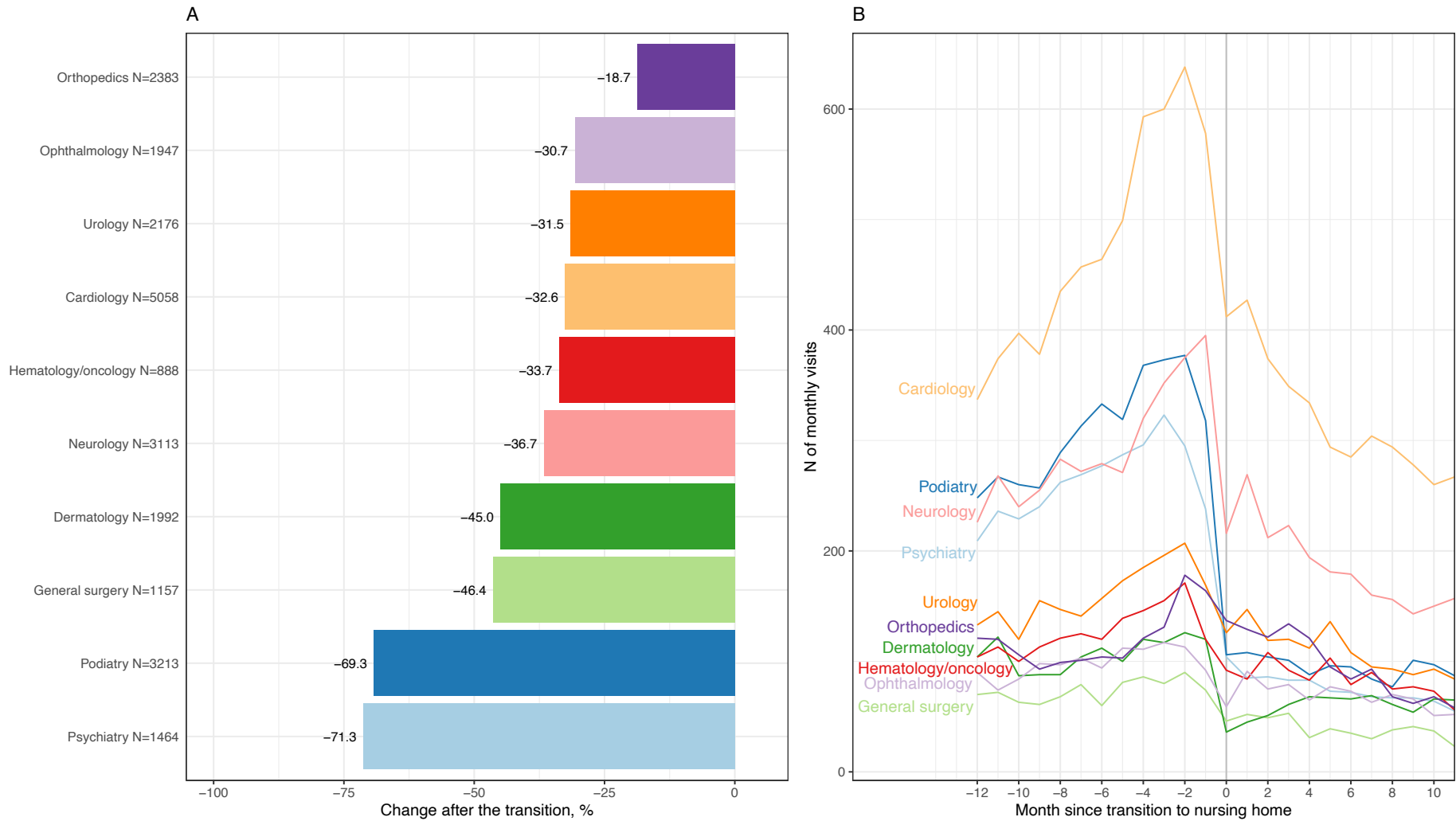
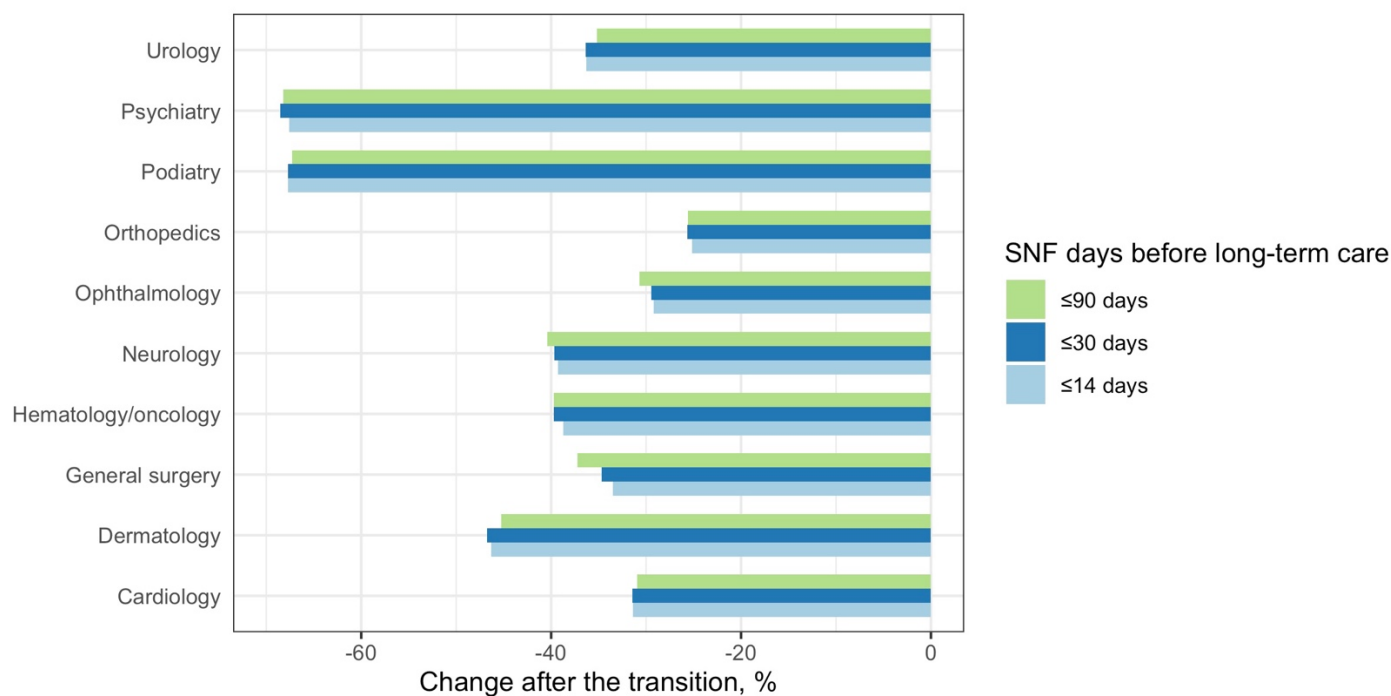


Table S2 Continuity of specialty care in residents visiting specialists in the year before and after the transition to a nursing home

| | Any visit after LTC transition with a previous provider | | 80% or more visits after LTC transition with a previous provider | |
|---------------------|---|------|--|-------|
| | N | % | N | % |
| Cardiology | 2,686 | 82.4 | 1,982 | 73.8% |
| Neurology | 1,532 | 82.4 | 1,142 | 74.5% |
| Urology | 984 | 80.0 | 709 | 72.1% |
| Orthopedics | 976 | 62.0 | 507 | 51.9% |
| Podiatry | 680 | 72.3 | 456 | 67.1% |
| Hematology/oncology | 499 | 90.0 | 431 | 86.4% |
| Ophthalmology | 582 | 77.8 | 403 | 69.2% |
| Dermatology | 523 | 80.5 | 390 | 74.6% |
| Psychiatry | 385 | 84.2 | 312 | 81.0% |
| General surgery | 371 | 72.5 | 237 | 63.9% |

Figure S2 Relative change in the number of previous users with a specialist visit after the transition to a nursing home, with different threshold of allowed days in SNF within the year before the transition

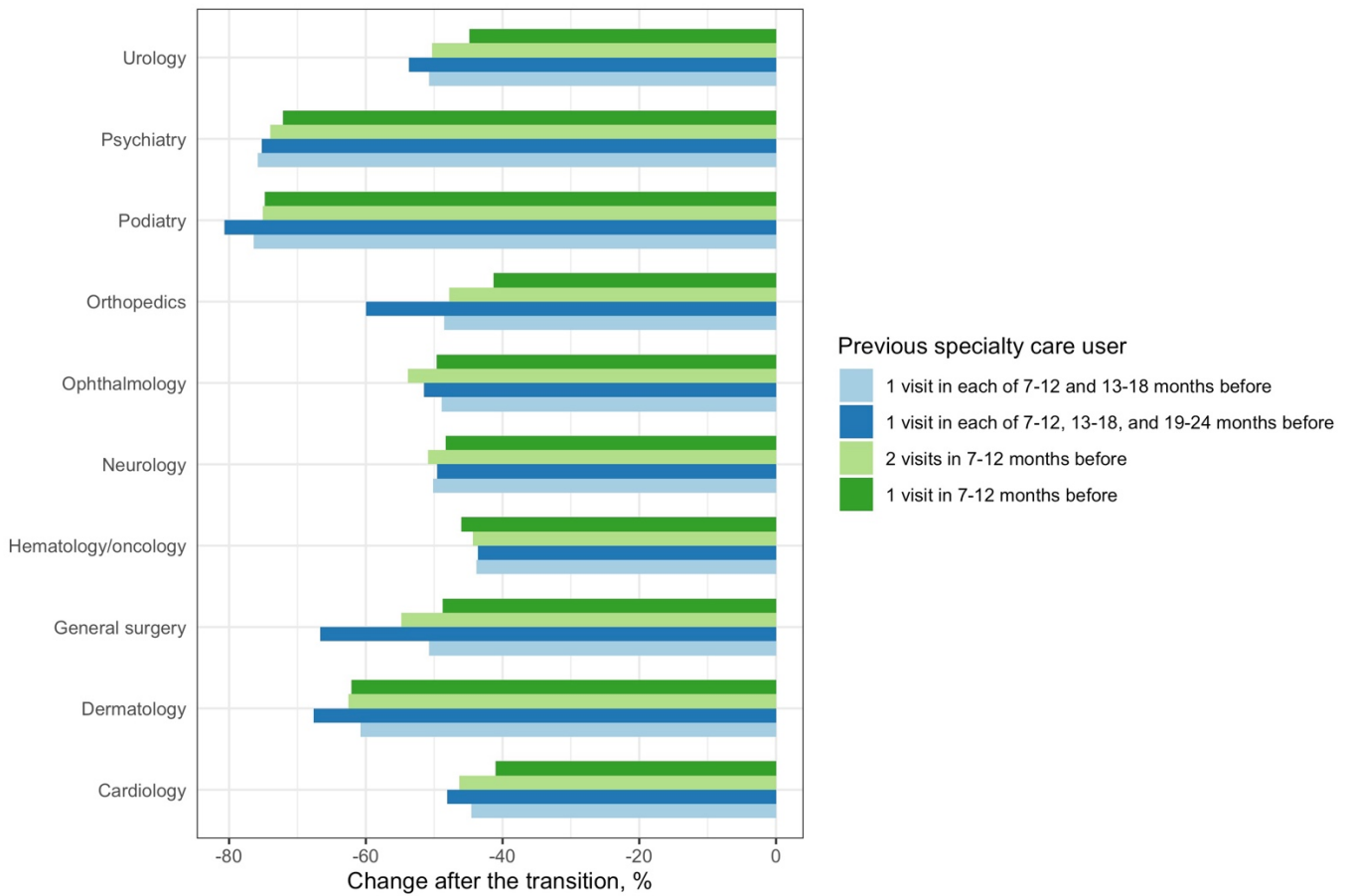


For this sensitivity analysis, we applied a more flexible definition of transition to long-term care (LTC), based on previously published algorithms,¹ by identifying the first MDS record outside a Medicare Part A covered SNF stay within the study period as the start of long-term care. We then summed the number of Medicare Part A covered SNF (skilled nursing facility) days a person had in the 360 days before the identified transition to long-term care (LTC), and excluded those with ≥ 14 , ≥ 30 , or ≥ 90 days in a SNF. The total numbers of included new LTC residents were 30,243, 31,933, and 36,808 in the respective cohorts.

The relative change in the number of previous users with a specialist visit from 12 months before to 12 months after the transition to a nursing home was similar across all studied specialties, regardless of the threshold of allowed days in SNF within the year before the transition.

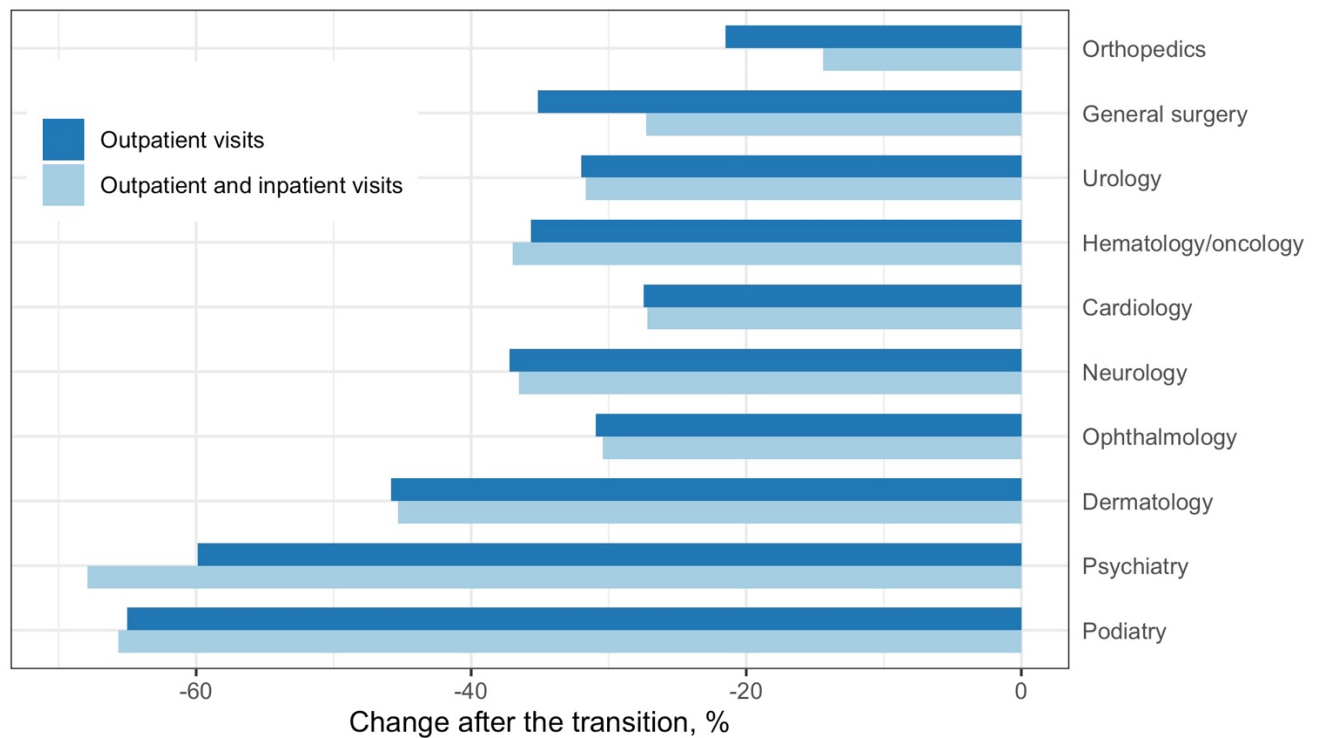
1. Goodwin JS, Li S, Zhou J, Graham JE, Karmarkar A, Ottenbacher K. Comparison of methods to identify long term care nursing home residence with administrative data. *BMC Health Serv Res.* 2017;17(1). doi:10.1186/S12913-017-2318-9

Figure S3 Relative change in the number of previous users with a specialist visit in 6 months before to 6 months after the transition to a nursing home, with different definitions of previous care users



Change after the transition compares the number of previous specialty care users, using four different definitions defined in the legend, who had specialty care visit within 6 months from the transition to long-term care in a nursing home with the number of previous users who had specialty care visit within 6 months before the transition. The change is similar in all four cohorts shown here across all specialties.

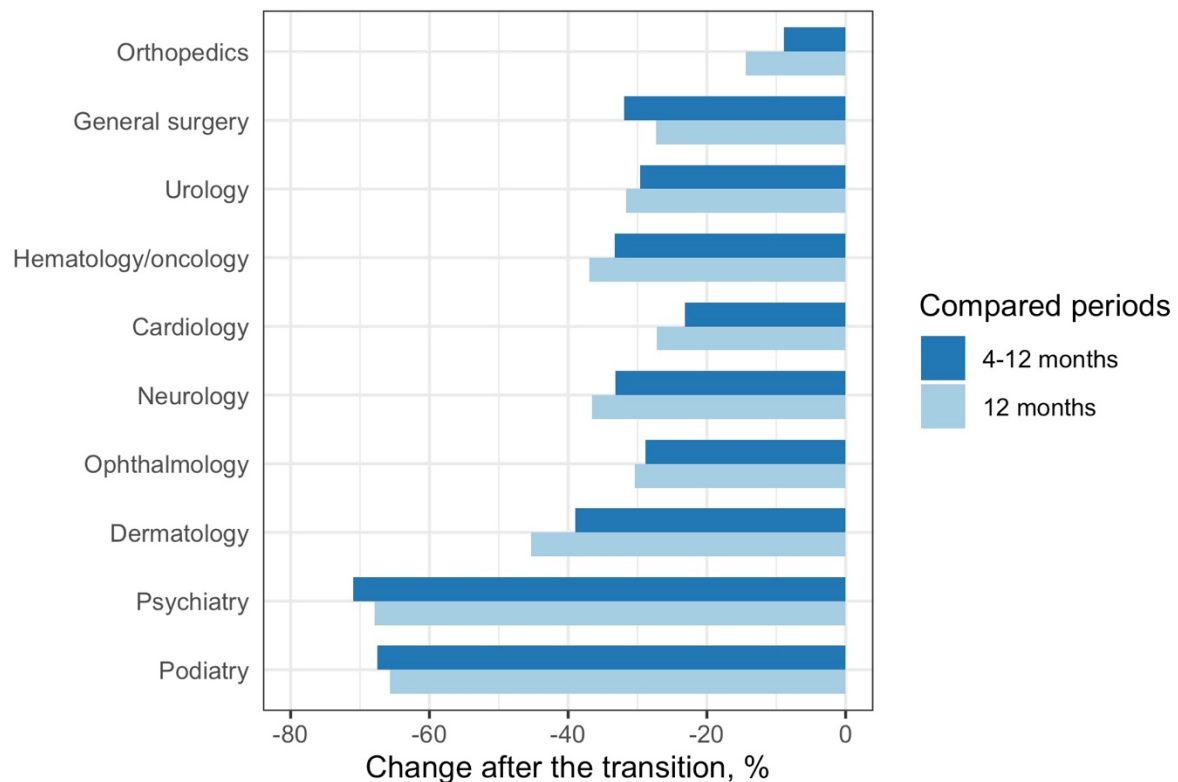
Figure S4 Relative change in the number of previous users with a specialist visit in outpatient or inpatient setting from 12 months before to 12 months after the transition to nursing home



Dark blue bars correspond to Figure 1A in the main manuscript: change in the number of specialty care users, comparing 12 months before to after the transition to long-term care in a nursing home. Light blue bars represent the change when inpatient specialist consultations are included together with the outpatient specialist visits.

Inpatient specialist consultations were identified in the Medicare claims carrier file, using HCPCS codes 99221-3 and 99251-5 and place of service codes 21 and 51.

Figure S5 Relative change in the number of previous users with a specialist visit before and after the transition to the nursing home, comparing periods of 12 months and 9 months (excluding 6 months around the transition)



Light blue bars correspond to the Figure 1A in the main manuscript.

Dark blue bars show the change in the number of residents who were previous users of specialty care with specialist visits in the 4-12 months before and after the transition to long-term care (i.e., excluding the 3 months before and after the transition)