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**DIRECTORATE FOR EMPLOYMENT, LABOUR AND SOCIAL AFFAIRS
HEALTH COMMITTEE**

Health Care Quality Indicators

Progress on Research and Development on Dementia Care

**HCQI expert meeting to be held on Thursday 18 and Friday 19 May 2017 at the OECD
Conference Centre, 2 rue André Pascal, 16th Arrondissement, Paris**

This paper presents the results of the pilot HCQI data collection on quality of dementia care indicators, which was conducted between January and March 2017. The pilot was largely successful and the Secretariat would like to thank all of the countries that participated.

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Note from the Secretariat

1. This paper presents the results of the pilot HCQI data collection on the quality of dementia care, which was conducted between January and March 2017. The pilot was largely successful and the Secretariat would like to thank all of the countries that participated.

2. After analysing the data collected for each of the six pilot indicators, the paper comes to the following conclusions and recommendations.

- Indicators 1 and 2, which measure hospital admissions, tell us a lot about how dementia is captured in hospital data, but are difficult to interpret as measures of the quality of dementia care due to variable rates of coding. These indicators represent a valuable piece of one-off research, but they are **not recommended for consideration as future HCQI indicators**.
- Under-coding does not seem to cause significant case-mix issues in indicators 3 and 4, which measure the timeliness of care for hip surgery patients. However, the cross-country variation that they highlight in the timeliness of care for hip surgery patients is in many cases not a dementia-specific issue, since the values of indicator 3 in particular track those in the non-dementia specific indicator very closely. However, the data do highlight some instances where people with dementia apparently receive different care to other people. **While these indicators appear robust, it will be necessary to consider whether and how they can add additional value beyond the existing non-dementia specific measures**.
- Given the high mortality rates that countries have reported, indicator 5 seems highly relevant to dementia care, and possibly to the care of older people more generally. It also provides a useful complement to upcoming HCQI work on patient-reported measures for hip surgery. However, only six countries submitted pilot data and no comparator is available for the non-dementia population. As such, **further development work is recommended to improve this indicator and expand country coverage**.
- Indicator 6, which measures the use of antipsychotics, is based closely on existing prescribing indicators. The data collected is plausible and shows interesting variation, and the indicator appears highly relevant to dementia care. Ten countries reported data in the pilot, but as many as seven other countries should be able to provide data. **Data should be collected from as many other countries as possible, with a view to including this indicator in Health at a Glance 2017**.

3. Delegates are invited to:

- COMMENT on the data and analysis presented in this paper; and
- COMMENT on the proposed next steps for the six pilot indicators.

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Introduction and update

Review of data collection process

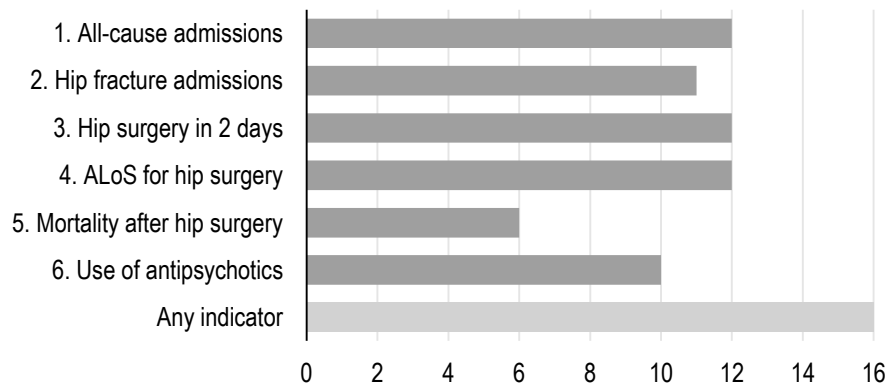
4. At the last meeting of the HCQI Expert Group in November 2016, delegates agreed to the pilot collection of a set of dementia care indicators. These indicators would be collected alongside the main HCQI data collection in early 2017.
5. Delegates provided detailed comments on the indicators proposed in the November meeting. As a result of these comments, the Secretariat made several changes to the pilot indicator set, including dropping the proposed indicator on place of death and modifying the definitions of several other indicators.
6. The full indicator definitions and data collection tool were sent out with the main HCQI data collection on 13 January 2017. The pilot included six indicators.
 1. All-cause hospital admissions for people with dementia
 2. Hospital admissions for hip fracture among people with dementia
 3. Hip fracture surgery initiated within 2 calendar days after admission to the hospital among people with dementia
 4. Average length of stay for hip fracture surgery for people with dementia
 5. (In-hospital and out of hospital) mortality following surgery for hip fracture among people with dementia
 6. Proportion of people aged 65 and over prescribed antipsychotics
7. The Secretariat is grateful to delegates from several countries who identified issues with the definitions and data collection tool early on in the process, allowing for revised and corrected definitions to be issued. The Secretariat is aware that some issues remain with the calculation of rates in the data collection tool. These issues do not affect the data input sheets or the data provided by countries, but will be resolved ahead of any future iterations of this data collection.

Participation in the data collection

8. As of Friday 28 April, a total of 16 countries (15 OECD countries plus Costa Rica) have provided data for at least one indicator in this pilot data collection. Any data provided after this date is not included in this paper, but may be included in materials and presentations at the HCQI Expert Group meeting on 18-19 May.
9. Measures based solely on hospital data were the most widely reported, with 12 countries reporting indicators 1, 3 and 4, and 11 countries reporting indicator 2. These indicators are relatively simple to construct and it is likely that a number of other countries could report them in the future.
10. Indicator 6, on the use of antipsychotics, is also well-reported, with ten countries providing data in the pilot collection. Based on the countries providing data for similar indicators on benzodiazepines for Health at a Glance 2015, a further seven countries may be able to provide data for this indicator in the future.
11. Mortality rates following hip fracture were less well-reported than the other indicators, with only six countries providing data. The low response rate probably reflects the complexity of the indicator, which requires the linking of hospital data with death

records. However, similar data linking is needed for some existing HCQI indicators, such as the patient-based mortality rates following stroke and AMI, which are reported by 19 and 20 countries, respectively. It may therefore be possible to increase participation in any future data collections.

Figure 1. Number of countries providing data for each indicator



Note: Counts include all countries providing data for any version of the indicator for at least one year; Costa Rica is included.

Estimating dementia prevalence

12. Two of the pilot indicators require an estimate of the number of people living with dementia as a denominator: indicator 1 (all-cause hospital admissions) and indicator 2 (hospital admissions for hip fracture). In the proposal put to delegates in November 2016, the Secretariat suggested that the denominator could be constructed using a common methodology based on an international review of dementia prevalence studies. However, following feedback from delegates, the indicator definition was modified to allow countries to supply their own prevalence estimates. This section reviews the estimates submitted by countries and compares them with estimates based on the international literature.

A common methodology for estimating dementia prevalence in OECD countries

13. Dementia prevalence studies have been conducted in many OECD countries. These studies usually take a sample of a country's population and apply one or several tests to ascertain how many people (of a given age and gender) meet the criteria for a diagnosis of dementia. The rates of dementia within the sample are then used to make estimates of the rates of dementia in the whole population of that country.

14. Any individual study can be subject to biases or random variations, so it may be better to look at all of the studies that have been conducted in a given country or region when constructing prevalence estimates. This can be done by conducting a systematic review of dementia prevalence studies, with suitable inclusion and exclusion criteria to ensure that only high-quality studies are included.

15. The World Alzheimer Report 2015, published by Alzheimer's Disease International, includes the results of a global systematic review of dementia prevalence studies since 1980, conducted by some of the leading academics in the field. Some countries have few or no studies that meet the criteria, so studies were grouped by global region (Table 1).

Table 1. Number of studies included in World Alzheimer Report 2015 prevalence estimates, by global region

	Number of studies included
Western Europe	85
Central Europe	4
North America	14
Latin America and Caribbean	18
Asia Pacific High Income	24
Australasia	4

Source: Prince, M. et al., *World Alzheimer Report 2015*, Alzheimer's Disease International

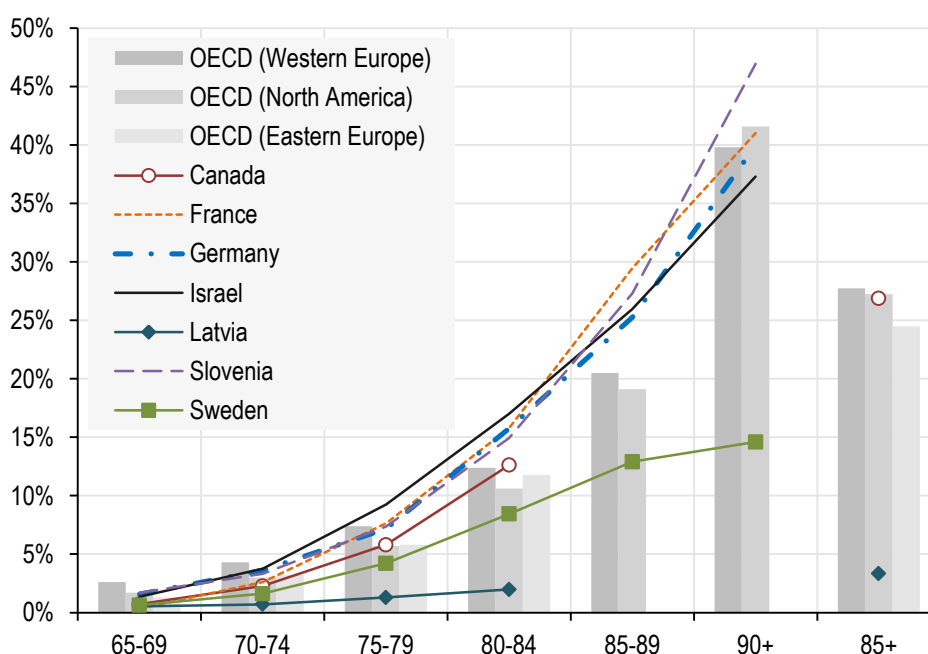
16. For each region, the report combines the results of all qualifying studies to produce estimated prevalence rates by five year age band. These rates can be applied to the populations of OECD countries to generate country-specific prevalence estimates.

This is similar to the methodology that the WHO plans to use to estimate country-level prevalence for the Global Dementia Observatory.

Comparing prevalence estimates supplied by countries with the international literature

17. Of the 12 countries reporting data for indicator 1 (all-cause admissions), seven were also able to supply their own estimates of the number of people living with dementia within different age bands, while the other five did not supply data for the denominator. The estimates supplied can be combined with UN population data to generate age-specific dementia prevalence estimates. Figure 2 compares the rates generated from data submitted by countries to those found in the World Alzheimer Report 2015.

Figure 2. Comparison of 2015 prevalence rates supplied by countries and estimated from the international literature



Source: Country-specific prevalence rates are calculated from data submitted as part of the pilot HCQI data collection on the quality of dementia care and UN population data. OECD rates for selected global regions are taken from the World Alzheimer Report 2015.

18. In five of the seven countries submitting data, prevalence rates closely match those estimated in the international literature. In some cases this may be because the data sources are the same. For example, the prevalence data supplied by Germany are based on a similar international review of the literature conducted by Alzheimer Europe. Prevalence data submitted by France is based on a 2013 analysis¹ of data from the

¹ Jacqmin-Gadda H, Alperovitch A, Montlahuc C, Commenges D, Leffondre K, Dufouil C, et al., “20-Year prevalence projections for dementia and impact of preventive policy about risk factors”. *European Journal of Epidemiology*. 2013; 28(6):493-502.

longitudinal population-based cohort study PAQUID, which is likely to be included in the World Alzheimer Report analysis for Western Europe.

19. Data supplied by four countries (Canada, Israel, Latvia and Sweden) are based on administrative data. However, in Canada and Israel this leads to prevalence estimates very close to those found in the academic literature, while in Sweden and Latvia it lead to much lower rates. The difference appears to be due to differences in the coverage of the administrative data used.

20. In Canada, estimates are based on a combination of hospital data, medicines data and primary care data; and in Israel data has been supplied by the health funds, which hold records on all health services including primary care. By using data from *all* care settings, Canada and Israel seem to be able to recreate research-based prevalence rates, implying that a high proportion of dementia cases are known to some part of the health system.

21. In Sweden, prevalence estimates are based on hospital and medicines data only, with data from primary care and the dementia registry not currently available; and Latvia uses data from its mental health register. These countries report much lower prevalence rates. While it is possible that prevalence is indeed much lower in Sweden and Latvia, it seems more plausible that these rates are underestimates, driven by the partial coverage of the data sources used and in particular the lack of data on primary care, where dementia is usually diagnosed in most OECD countries.

22. There are two implications of this analysis for the use of prevalence rates in constructing dementia indicators.

- First, estimates based on administrative data are not in general comparable with estimates based on the academic literature. Where countries have high diagnosis rates and access to primary care data, they may produce similar results, but in other cases administrative data will lead to systematically lower estimates.
- Second, the OECD estimates produced using results from the World Alzheimer's Report 2015 correspond closely to the estimates supplied by countries that are either research-based or derived from whole-system administrative data.

23. It therefore seems *necessary* to use OECD prevalence estimates when constructing indicators for two groups of countries: those that have not supplied estimates of their own and those that have used administrative data that does not include primary care. For the remaining five countries, there is close correspondence between OECD estimates and country-supplied data. However, for consistency and simplicity, OECD estimates have been used for all countries when analysing indicators 1 and 2 in this report.

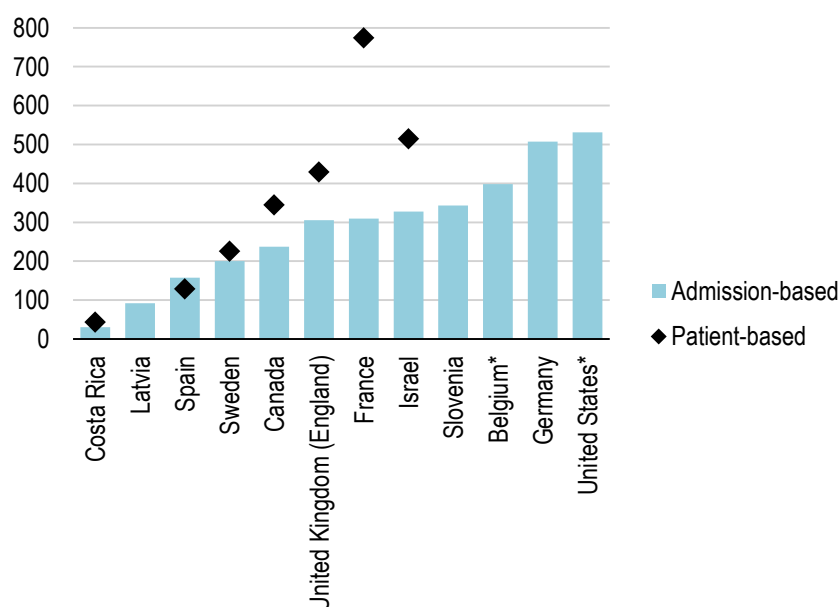
Results of the pilot data collection by indicator

Indicator 1: all-cause hospital admissions

There is significant cross-country variation in the number of admissions that can be identified as people with dementia

24. Figure 3 shows the results of the pilot data collection for indicator 1 – all-cause hospital admissions per thousand people with dementia. Where countries submitted the admission-based and patient-based variants, both are shown. As discussed above, OECD prevalence estimates are used as the denominator for all countries.

Figure 3. All-cause hospital admissions per thousand people with dementia, 2015 or nearest year (age-standardised rates)



Note: * 2014 has been used for Belgium and the United States

Source: Denominators are OECD estimates of prevalence based on the World Alzheimer Report 2015

25. There is significant variation in the admission rates implied by the pilot data reported by these 12 countries. In the United States and Germany, for which only the admission-based variant has been reported, there were more than 500 admissions in 2015 with a primary or secondary diagnosis of dementia for every thousand people living with dementia. In Costa Rica, Latvia and Spain, the corresponding rates were 30, 92 and 157.

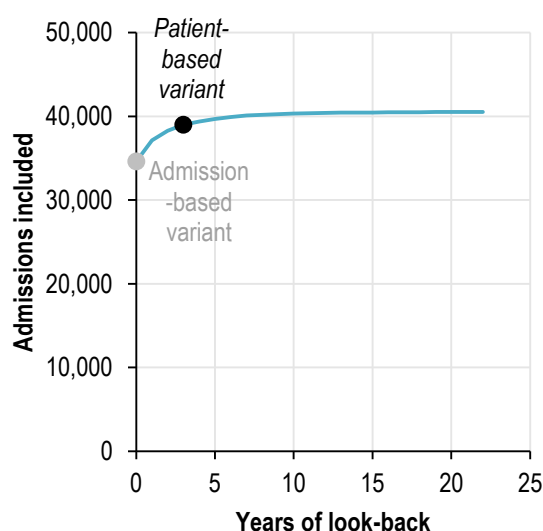
The patient-based variant picks up more cases, but there may be issues with its application in some countries

26. Where countries have reported the patient-based variant (which looks back at the previous three years of hospital data to identify diagnoses of dementia for patients admitted in the reference year) they have usually been able to identify more admissions

relating to people with dementia. Israel, The United Kingdom, Canada and Costa Rica have all identified between 40% and 60% more cases in the patient-based variant.

27. Supplementary analysis conducted by Israel (Figure 4) indicates that looking back three years picks up most of the dementia admissions that are identifiable from hospital data. Israel is able to link hospital admissions data from 2015 with data from the previous 22 years to identify admissions in 2015 for people who have previously had a diagnosis of dementia recorded in hospital. This approach identifies just over 40,000 relevant admissions. The admission-based variant includes only 85% of these admissions, but the patient-based variant includes 96% of them.

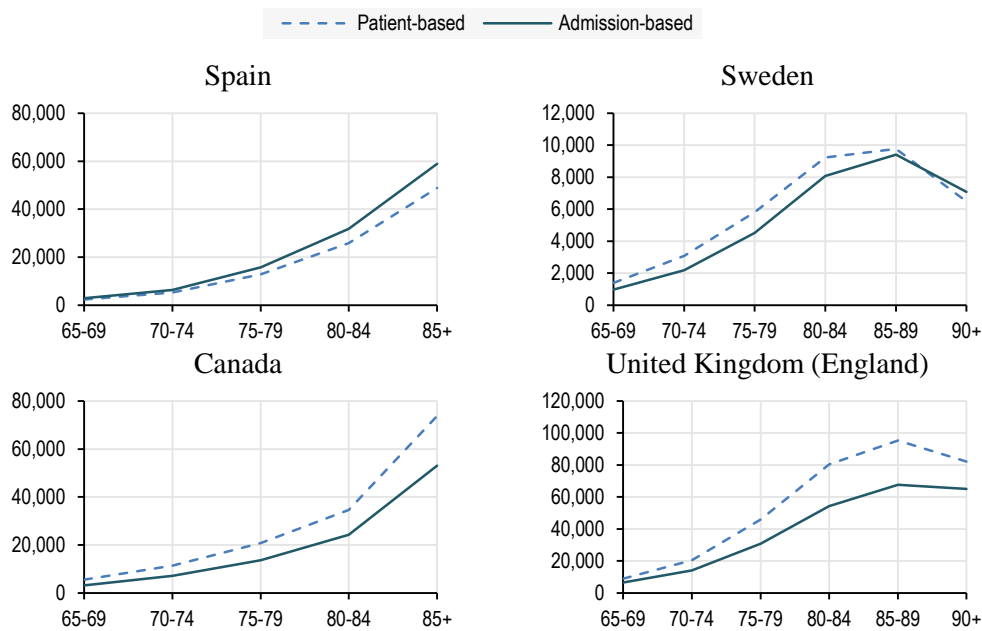
Figure 4. Number of admissions for people with dementia in 2015 identified by looking back over multiple years of hospital data in Israel



28. However, in some countries, there appear to be problems with the patient-based variant. In Sweden it identifies only 12% more cases than the admission-based variant, and in Spain it actually includes fewer cases. Looking at the age breakdown of the two variants in these countries illustrates the problem (Figure 5). In Spain, the patient-based variant contains fewer admissions at all ages, and in Sweden, it contains fewer in the 90+ age group. In contrast, data from Canada and the United Kingdom behave as expected, with the patient-based variant identifying more cases in each age group. Further work would be needed to understand the cause of these anomalies, but in the Swedish case it should be noted that only indicators 1 and 2 are affected (the patient-based versions of indicators 3-5 do not show the same problems).

29. Finally, in France, the patient-based variant picks up a surprisingly large number of cases, including nearly two and a half times as many admissions as the admission-based variant. Again, further work would be needed to understand why this is so different to other countries.

Figure 5. Number of admissions identified by variants of indicator 1 in selected countries, by age group (2015)



Differences in coding rates mean that this indicator cannot be interpreted as a measure of the quality of care

30. There are a number of possible explanations for these large variations in the ratio between hospital admissions with a code of dementia and dementia prevalence estimates. One or more of the following may be true.

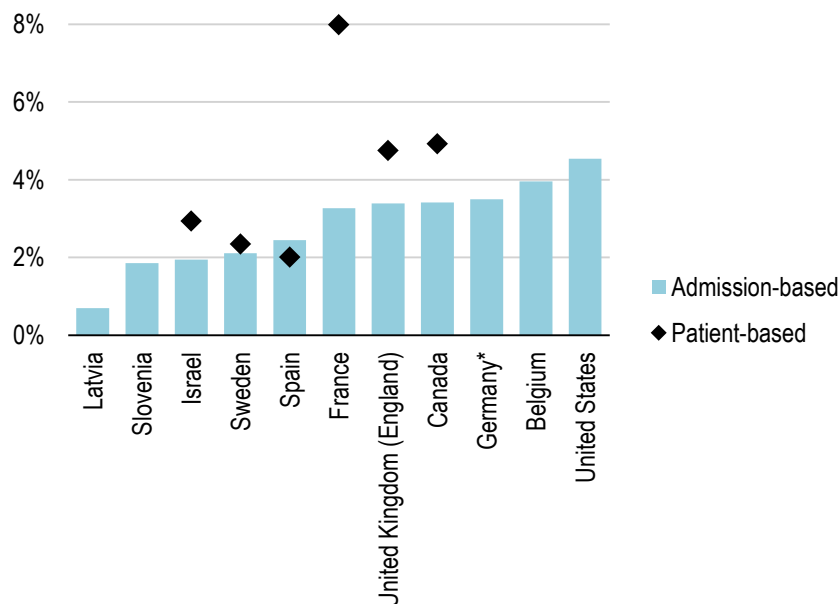
1. Hospital admissions are more common in some countries, whether or not someone has dementia.
2. Having dementia increases the likelihood of hospitalisation in some countries more than in others.
3. Rates of dementia coding vary between countries, meaning that variations are driven by the proportion of dementia admissions that are picked up by the indicator, rather than the actual number of admissions.

31. If explanation 2 is the dominant driver of variation then this indicator may be a useful proxy for the ability of community health and long-term care services to keep people with dementia out of hospital. However, if the other two explanations dominate, then this indicator may not be a good measure of the quality of dementia care.

32. We can get some idea of the importance of explanation 1 by looking at how the number of dementia admissions compares to the total number of admissions recorded in that country in a given year (Figure 6) – although these rates are not age-standardised, so will show a downwards bias for countries with younger populations such as Israel. These data appear to suggest that part of the variation in indicator 1 is indeed explained by the fact that some countries simply admit more people to hospital, irrespective of whether they have dementia. For example, Germany reports significantly more dementia

admissions (per person with dementia) than Canada or the United Kingdom (England), but as a proportion of total admissions the numbers are very similar.

Figure 6. All-cause admissions for people with dementia as a proportion of all hospital admissions, 2014 or nearest year



Note: * 2013 data has been used for Germany

Source: Data on total hospital discharges is taken from the OECD Health Database

33. However, this explanation does not appear to account for the lower admission rates reported by Latvia, Slovenia, Sweden and Spain, or the higher rates in the United States. These differences may be driven by one of the two other explanations: either there are differences in the impact of dementia on the likelihood of hospitalisation, or coding rates vary.

34. We know that dementia is under-coded, because in a number of countries a third of the admissions included in the patient-based version of the indicator do not have a primary or secondary diagnosis code of dementia. As a result, we cannot be confident that cross-country differences reflect the risk of hospitalisation for people with dementia. While the collection of this data has significantly advanced our understanding of how hospital data can be used to monitor dementia care, in its current form we cannot be confident that it tells us anything about the quality of care.

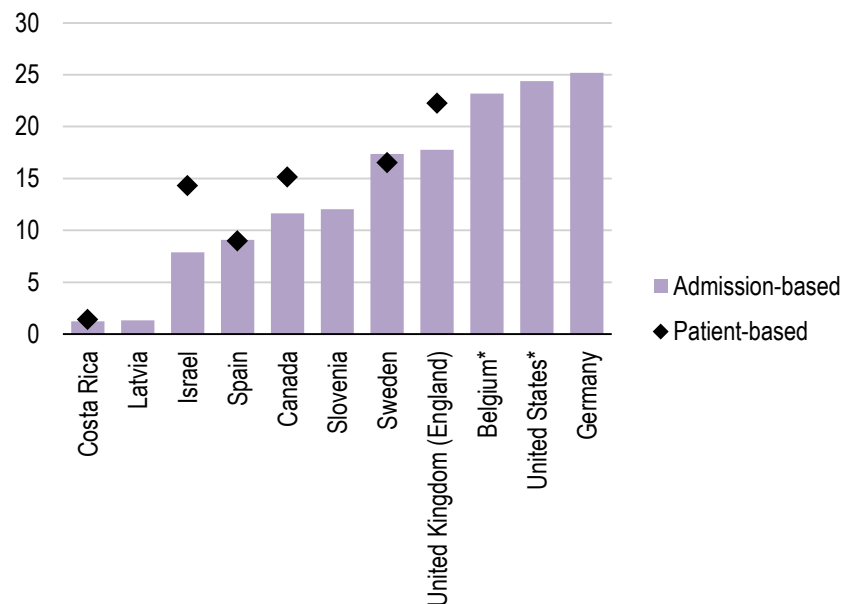
Indicator 2: hip fracture admissions

Cross-country differences in hip fracture admissions are similar to those in all-cause admissions

35. Figure 7 shows the results of the pilot data collection for indicator 2 – hip fracture admissions per thousand people with dementia. The data show a similar pattern to indicator 1, with the Germany, the United States and Belgium reporting the highest rates, despite only reporting the admission-based variant.

36. However, there are some notable differences. Sweden reports one of the lowest rates for indicator 1, but (relative to other countries) a higher rate for indicator 2, while the opposite is true for Israel. This reflects large differences in the proportion of identified dementia admissions that have a primary diagnosis code of hip fracture: 8.7% in Sweden and 2.4% in Israel (for the patient-based variant, the difference is slightly less pronounced: 7.3% versus 2.8%).

Figure 7. Hip fracture admissions per thousand people with dementia, 2015 or nearest year (age-standardised rates)



Note: * 2014 has been used for Belgium and the United States; some countries have low sample sizes in the numerator - Costa Rica (45, 52 patient-based), Latvia (34) and Slovenia (249)

Source: Denominators are OECD estimates of prevalence based on the World Alzheimer Report 2015

It is difficult to interpret hip admissions as a quality indicator, but the data highlight the importance of hip fracture care to people with dementia

37. As with indicator 1, cross-country differences could have three causes.

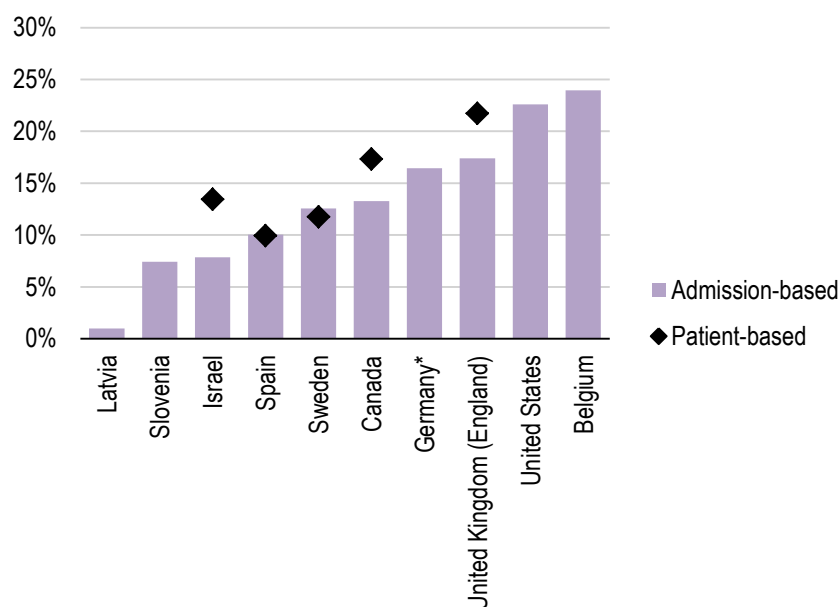
1. Hospital admissions for hip fracture are more common in some countries, whether or not someone has dementia.
2. Having dementia increases the likelihood of hospitalisation for hip fracture in some countries more than in others.
3. Rates of dementia coding vary between countries, meaning that variations are driven by the proportion of dementia admissions that are picked up by the indicator, rather than the actual number of admissions.

38. We can again get an idea of the importance of the first explanation by looking at how the number of hip fracture admissions reported for people with dementia compares to the total number of hip fracture admissions in each country (Figure 8). As with indicator 1, we can see that this explains some but not all of the cross-country variation. The high rate of hip fracture admissions for people with dementia in Germany is driven by high admission rates for hip fracture in the population as a whole, but this does not account for the high rates in Belgium and the United States, or the low rates in Israel. A

hip fracture admission in Belgium is three times as likely to have a secondary diagnosis code of dementia as a hip fracture admission in Israel.

39. In interpreting this data, we are faced with the same problem as in indicator 1: It is not clear which of the other two explanations is driving this difference. It may be that people with dementia in Belgium have a significantly increased risk of hip fracture, while their counterparts in Israel are better managed by long-term care services which are able to prevent falls. On the other hand, it may simply be that Belgian hospitals are much better at coding dementia.

Figure 8. Hip fracture admissions for people with dementia as a proportion of all hip fracture admissions, 2014 or nearest year



Note: * 2013 data has been used for Germany

Source: Data on total hospital discharges is taken from the OECD Health Database

40. However, Figure 8 does tell us one other interesting piece of information: A large proportion of hip fracture admissions relate to people with dementia. In Belgium, nearly a quarter of all hip fracture admissions have a secondary diagnosis code of dementia, with the United States not far behind. Given that dementia is believed to be under-coded, the true proportion might be significantly higher than this – both in Belgium and the United States, and in other OECD countries.

41. The implications of Figure 7 and Figure 8 taken together can broadly be summarised as follows.

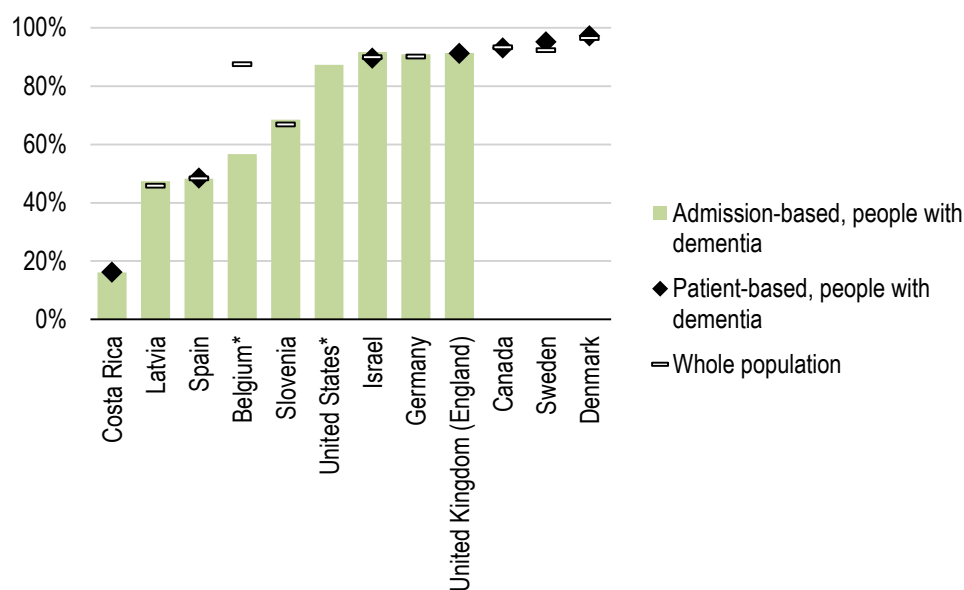
Close to one in 40 people with dementia in Belgium fracture their hip every year, accounting for nearly a quarter of all hip fracture admissions. Despite significant under-coding, it is reasonable to expect that the underlying rates in other countries may be similar. This highlights the importance hip fracture care to people with dementia, and conversely the importance of considering dementia when analysing the quality of care for hip fractures.

Indicator 3: time to hip surgery

Under-coding does not appear to significantly skew this indicator

42. Figure 9 shows the results of the pilot data collection for the 12 countries that submitted data for indicator 3 - hip fracture surgery initiated within 2 calendar days after admission to the hospital among people with dementia. Five countries submitted the admission-based variant only, three submitted the patient-based variant only and four submitted both.

Figure 9. Proportion of hip surgery carried out within two days for people with dementia and the population as a whole, 2015 or nearest year (crude rate)



Note: * 2014 has been used for Belgium and the United States; some countries have low sample sizes in the denominator - Costa Rica (31), Latvia (19) and Slovenia (162)

43. The previous analysis of indicators 1 and 2 suggests that under-coding is skewing the results to the point that we cannot interpret them as a measure of quality. Under-coding may also be a problem here, but for a different reason. Since both the numerator and the denominator are based on hospital data, any under-coding of dementia will affect both. Missing cases will therefore not lead directly to a lower result for the indicator, as they do in indicators 1 and 2, but will only skew the indicator insofar as they affect the case-mix of the set of admissions that are identifiable as dementia cases.

44. Comparing the two variants of the indicator can give an idea of the degree to which case-mix issues should be a concern. The patient-based variant contains two groups of admissions:

1. those that have a secondary diagnosis code of dementia (and which constitute the admission-based variant); and
2. those that do not, but which can be linked to previous admissions that were coded as dementia.

45. If there is a difference in case-mix between these two groups then the admission-based and patient-based variants should differ. Of the four countries that report both

variants, two – Israel and the United Kingdom (England) – report a substantially larger denominator for the patient-based version. Nonetheless, the admission-based and patient-based results are nearly identical, indicating that the case-mixes of the two groups described above are not significantly different. While this does not guarantee that the case-mix of admissions for people with dementia who are not identified at all in hospital data is the same, it does suggest that case-mix may not be a significant problem for this indicator.

Rates for people with dementia are the same as for the rest of the population

46. This indicator is based closely on the existing HCQI indicator looking at time from admission to hip surgery for the whole population, which is also included in Figure 9 for comparison. It is striking that, in almost every country, the proportion of people with dementia receiving hip surgery within two days of admission is essentially identical to the rate within the whole population.

47. Belgium is the one exception to this, but this appears to be down to an error with the data. The denominators reported by Belgium for this indicator are unexpectedly large – much larger than the denominators for indicator 4, while for all other countries the denominators of the two indicators are almost the same. In fact, the low rate reported by Belgium for the dementia-specific indicator is incompatible with the high rate reported for the general indicator, in that it would require more than 100% of people without dementia to have undergone surgery within two days. As such, the Belgian data for this indicator should be disregarded until this issue has been investigated.

48. This suggests that caution is needed about generalising to other indicators the conclusion that case-mix is not a significant issue. If there are other indicators where rates vary more between population sub-groups, it is possible that under-coding may lead to more case-mix variation.

Although this indicator appears valid, its relevance may be limited

49. While there do not appear to be significant methodological problems with this indicator, another implication of the dementia rates matching the wider population is that the results are not hugely interesting. It is in a sense a null finding: the indicator was conceived on the hypothesis that people with dementia might receive less timely care when they are admitted to hospital for hip surgery, but this appears not to be the case. This is an interesting (and reassuring) finding for a one-off piece of research, but it brings into question the value of collecting and publishing this data on a regular basis.

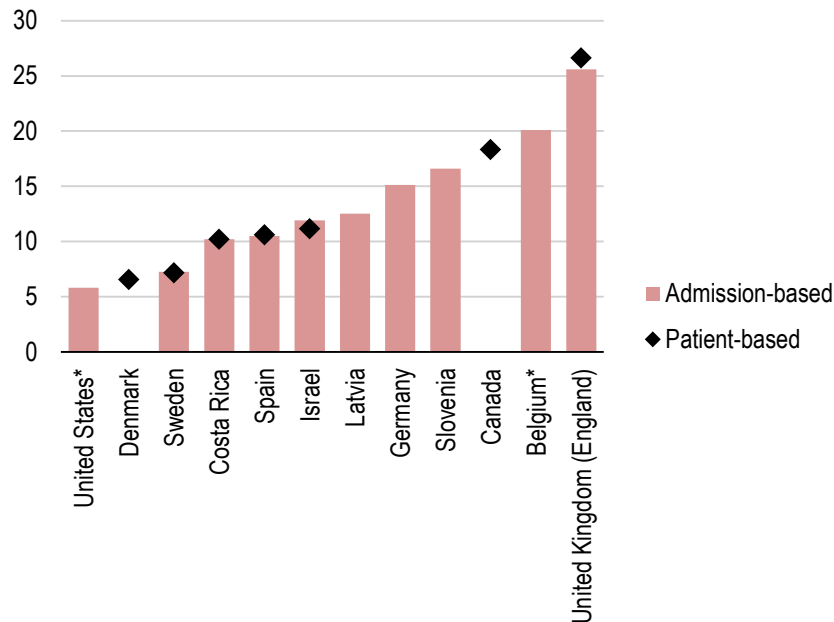
Indicator 4: average length of stay for hip surgery

The average length of stay indicator seems robust and shows striking cross-country variation

50. As with the previous indicator, a comparison of the patient-based and admission-based variants can give an indication of whether under-coding of dementia has led to case-mix issues that could skew the results. Again, the two variants of the indicator match closely for countries that report both. With the caveats given above, it appears that this is not a major concern and that the indicator can be considered a valid measure of length of stay for people with dementia who undergo hip surgery.

51. With that in mind, the cross-country variation in Figure 10 is striking. A person with dementia who has hip surgery in the United States, Denmark or Sweden can expect to be in hospital for six or seven days. People in the United Kingdom (England) typically stay four times longer, more than 25 days.

Figure 10. Average length of stay (days) for people with dementia admitted to hospital for surgery following a hip fracture, 2015 or nearest year (crude rate)



Note: * 2014 has been used for Belgium and the United States; some countries have low sample sizes in the denominator - Costa Rica (31), Latvia (19) and Slovenia (162)

There are some differences between the rates for people with dementia and the rest of the population

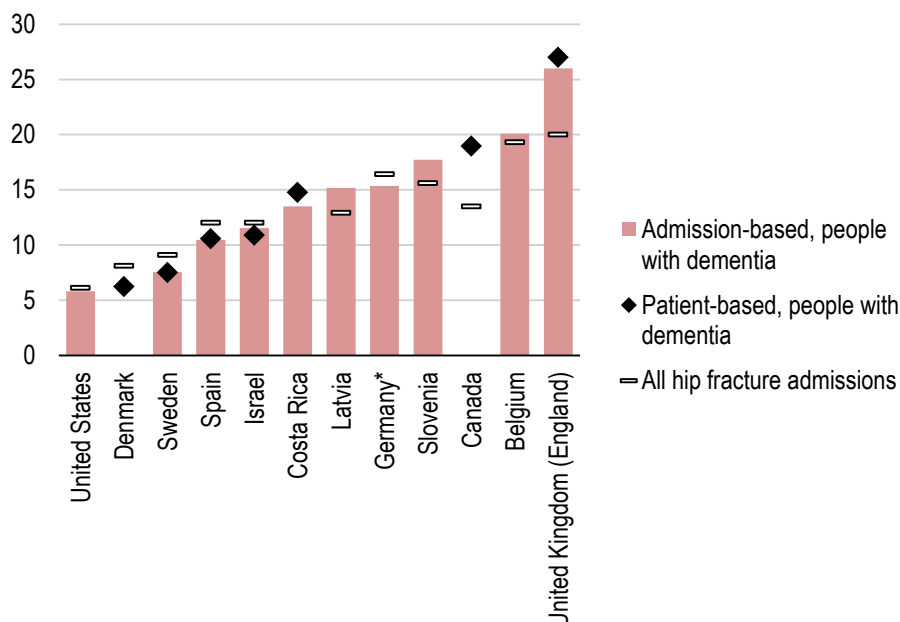
52. Although length of stay for hip fracture is not an existing HCQI indicator, the OECD does hold data on length of stay by diagnostic category. This is not quite the same measure, since it is not limited to those that had surgery and includes people of all ages (although most people who fracture their hips are aged 65 or older). Nevertheless, it can serve as a useful comparator for this indicator to see whether people with dementia have longer or shorter stays than the rest of the population. Figure 11 shows this comparison for 2014, which is the latest year of whole-population data available in the majority of countries.

53. While the dementia and whole-population rates are in most cases similar, there is markedly more divergence than in the time to surgery indicator. In Denmark and Sweden, people with dementia spend one or two days fewer in hospital than the rest of the population. In Canada and the United Kingdom, they stay five or six days longer.

54. Putting this result together with the previous indicator it is possible to tell a plausible story about the timeliness of hip fracture care for people with dementia in Canada and the United Kingdom (England). On admission to hospital, people with dementia are moved quickly to surgery and more than 90% have the operation within two days – the same rates as in the rest of the population. However, following surgery, people

with dementia remain in hospital an average of five to six days longer than other people, and longer than people with dementia in most other countries.

Figure 11. Average length of stay (days) for people with dementia admitted to hospital for surgery following a hip fracture, 2014 or nearest year (crude rate)



Note: * 2013 has been used for Germany; some countries have low sample sizes in the denominator - Costa Rica (26), Latvia (18) and Slovenia (168)

Source: Data for all hip fracture admissions is taken from the OECD Health Database

Mortality following hip surgery

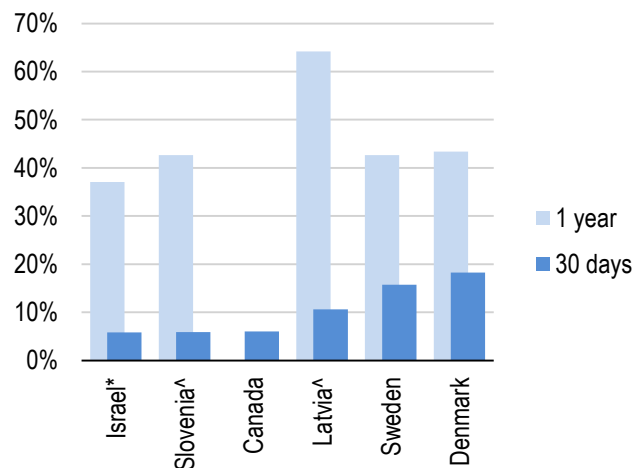
Mortality rates following hip surgery are high, suggesting that this is a relevant indicator

55. The data collected for indicator 5 – 30-day and 1-year mortality following hip surgery – are shown in Figure 12.

56. Mortality rates for people with dementia following hip surgery are high across all countries that reported data. Excluding Latvia, where the sample size is very low, all countries reported a similar rate for 1-year mortality: around 40% of people with dementia die within one year of hip surgery. There is more variation in short-term mortality rates, from 6% in Israel to 18% in Denmark.

57. High mortality rates suggest that this indicator is relevant to the care of people with dementia, and perhaps older people more broadly.

Figure 12. 30-day and 1-year mortality rates following hip surgery for people with dementia, 2015 or nearest year (age-standardised rate)



Note: * 2013 data is used for Israel; ^ 2014 data is used for Slovenia and Latvia; some countries have low sample sizes in the denominator - Latvia (19) and Slovenia (313)

There may be merit in further work to understand these results and extend the analysis to more countries

58. The additional technical complexity of this measure, which requires the linking of hospital data and death records, has led to a smaller number of countries reporting data. This limits the scope for cross-country comparison and would need to be addressed if this indicator were to be included in the OECD Health Database at some point in the future.

59. Moreover, while this indicator appears relevant, it is not straightforward to interpret. People with dementia (and people who fracture their hip in general) are old and some would die within a year even without a fall. Although the literature does support the idea that hip fractures cause excess mortality, this indicator does not quantify that excess rate. Neither does it demonstrate that people with dementia are more likely to die after hip surgery than the rest of the population. Further work would be needed to understand the implications of these results.

60. There are reasons to believe that further work on this indicator would be worthwhile. As well as being a potentially powerful measure of outcomes for people with dementia and older people in general, it also links to the HCQI Expert Group's work on patient-reported measures for hip surgery. Possible next steps include:

- collecting the same indicator for the whole population; and
- working with countries to try to expand coverage.

Use of antipsychotics

Prescription rates show significant variation but seem to be plausible

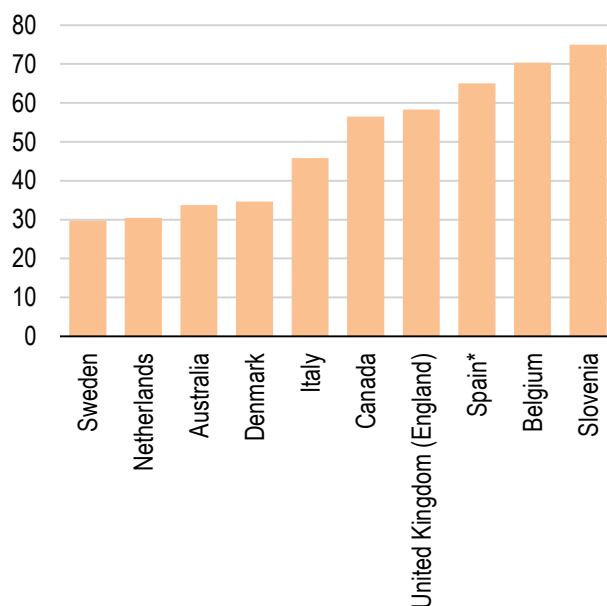
61. Figure 13 shows the data collected for indicator 6 – the proportion of people aged 65 and over with a prescription for antipsychotics.

62. Prescription rates vary by more than a factor of two, from 30 in every 1000 people aged 65 and over in Sweden and the Netherlands to more than 70 in Belgium and

Slovenia. However, this is less dramatic variation than is seen in the two existing HCQI indicators on the prescribing of benzodiazepines to older people.

63. The average rate across the ten countries that submitted data is 50. This seems like a plausible figure and is similar to the average rates published in Health at a Glance 2015 for the benzodiazepines indicators.

Figure 13. People with a prescription for antipsychotics per thousand persons 65+, 2015 or nearest year

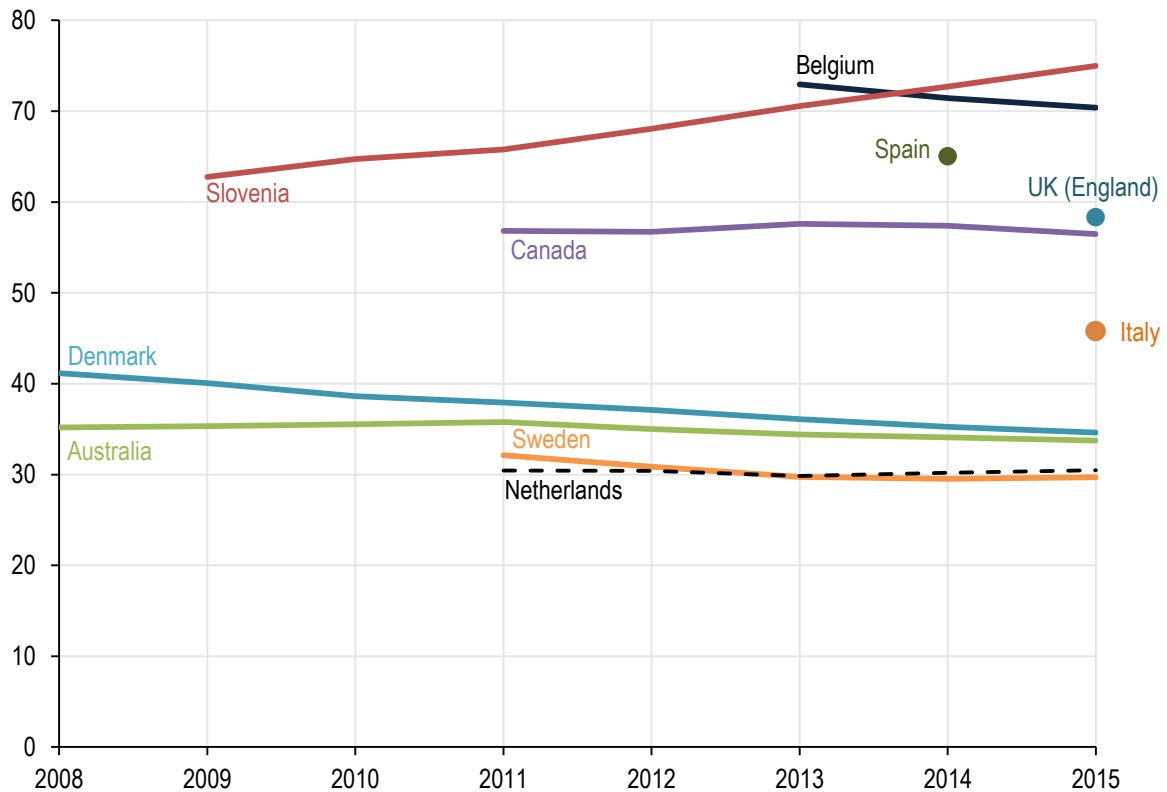


Note: * 2014 data is used for Spain

Most countries have seen rates decreasing over time, but rates in Slovenia seem to be rising

64. Figure 14 shows how the rates of prescribing of antipsychotics to older people have evolved over time in countries that have submitted data. The majority of countries have seen stable or decreasing rates, with Denmark showing a particularly marked fall over the past eight years. While Belgium has one of the highest rates of prescription of antipsychotics, the last two years have seen a reduction from 73 per 100 people to 70.

65. However, Slovenia shows a different pattern to other countries, with the use of antipsychotics rising steadily from 63 per 1000 persons 65 and above in 2009 to 75 per 1000 in 2015 – a 20% increase. This could raise concerns about the overuse of these drugs to manage difficult behaviour in older people.

Figure 14. People with a prescription for antipsychotics per thousand persons 65+

A significant proportion of antipsychotic prescriptions seem to go to people with dementia

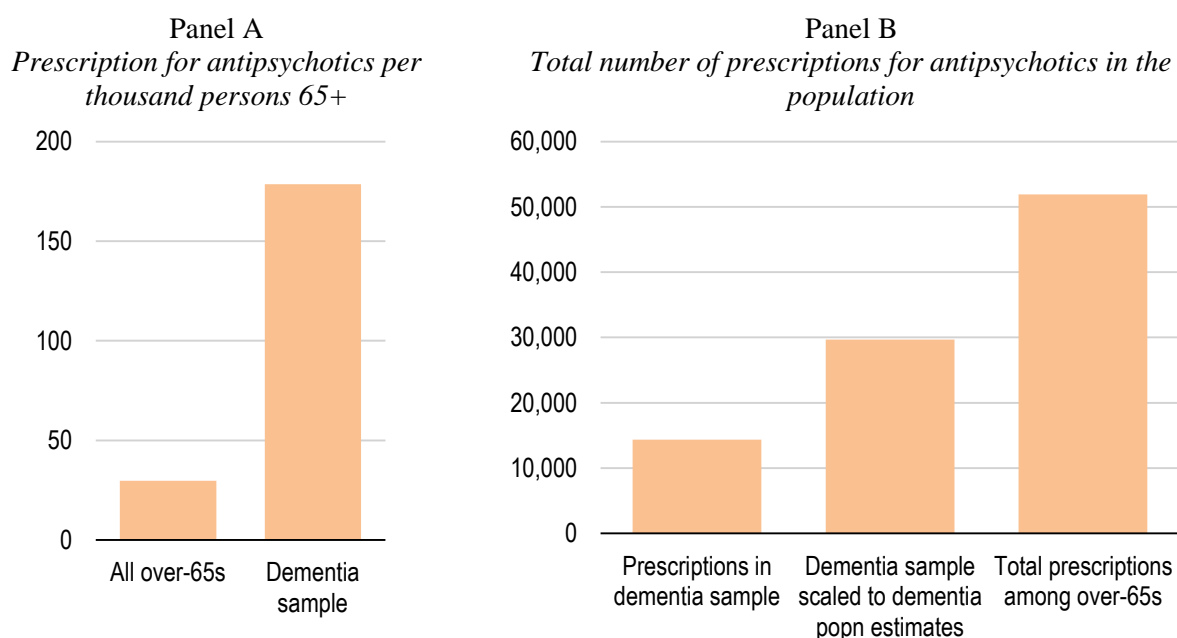
66. Sweden has carried out some additional analysis of the rate of antipsychotic prescriptions in a subset of the 65 and over population that can be identified as having dementia, based on hospital data and medicines registers. As discussed at the start of this paper, the methodology used to identify this sub-population seems to pick up around half of the estimated number of people with dementia in Sweden.

67. The results of this analysis are shown in Figure 15. Unsurprisingly, people in the dementia sample were much more likely to have a prescription of antipsychotics in 2015 than the population aged 65 and over as a whole (Panel A). In fact, the rate is six times higher: 179 per 1000 in the dementia sample, compared to 30 per 1000 in the whole population aged 65 and over.

68. These figures can also be used to address another question, which is important in determining the relevance of this indicator to dementia care. Because most countries are unable to reliably identify people with dementia in prescriptions data, the indicator has been defined to include all persons aged 65 and older. If a significant proportion of prescriptions among this age group go to people with dementia then the indicator may be a useful measure of the quality of dementia care. If the vast majority go to people without dementia, then the measure may be of wider interest, but less relevant to dementia.

69. Panel B compares the number of prescriptions in the Swedish dementia sample to the total number among persons 65 and above in Sweden. Out of 52,000 prescriptions, around 14,000 – or a quarter of them – go to people in the dementia sample. However, the sample does not include everyone with dementia, so it is reasonable to assume that the true number of prescriptions going to people with dementia is higher than this. If it is assumed that people with dementia who are not in the sample are equally likely to be prescribed antipsychotics as those of the same age from within the sample, we can produce an estimate of the total number of prescriptions going to people with dementia. As shown in Panel B, the result is that an estimated 30,000 prescriptions – or 57% of all prescriptions among persons 65 and over – are given to people with dementia. In Sweden at least, it appears that measuring the total number of prescriptions among persons 65 and above is highly relevant to dementia care.

Figure 15. Additional analysis of antipsychotics prescriptions in sample of population 65 and over with dementia in Sweden (2015)



This indicator should be considered for inclusion in Health at a Glance 2017 and data should be collected from more countries

70. Of the six pilot indicators, this seems to be the most robust and relevant. It is based closely on existing HCQI indicators, produces plausible results, appear highly relevant to the quality of dementia care and shows interesting variation across countries and over time. As such, it should be considered for inclusion in Health at a Glance 2017.

71. However, before publication, it would be beneficial to expand country coverage. Pilot data has been collected for ten countries, but the two benzodiazepines indicators on which this measure is based cover 13 and 14 countries respectively. All countries that report the benzodiazepines measures should be able to report this one, with the exception of Israel, which carried out bespoke work. This suggests that data could be collected from

seven additional countries: Finland, Ireland, Korea, New Zealand, Norway, Portugal and the Slovak Republic.

Conclusions and proposal

72. The pilot HCQI data collection on the quality of dementia care has overall been successful, and thanks for that must go primarily to the participating countries. In all, 16 countries participated and five of the six pilot indicators cover at least ten countries.

73. Based on the analysis in this paper, the Secretariat proposes the following actions for each of the six indicators.

- Indicators 1 and 2, which measure hospital admissions, tell us a lot about how dementia is captured in hospital data, but are difficult to interpret as measures of the quality of dementia care due to variable rates of coding. These indicators represent a valuable piece of one-off research, but they are **not recommended for consideration as future HCQI indicators.**
- Under-coding does not seem to cause significant case-mix issues in indicators 3 and 4, which measure the timeliness of care for hip surgery patients. However, the cross-country variation that they highlight in the timeliness of dementia is in many cases not a dementia-specific issue, since the values of indicator 3 in particular track those in the non-dementia specific indicator very closely. However, the data do highlight some instances where people with dementia apparently receive different care to other people. **While these indicators appear robust, it will be necessary to consider whether and how they can add additional value beyond the existing non-dementia-specific measures.**
- Given the high mortality rates that countries have reported, indicator 5 seems highly relevant to dementia care, and possibly to the care of older people more generally. It also provides a useful complement to upcoming HCQI work on patient-reported measures for hip surgery. However, only six countries submitted pilot data and no comparator is available for the non-dementia population. As such, **further development work is recommended to improve this indicator and expand country coverage.**
- Indicator 6, which measures the use of antipsychotics, is based closely on existing prescribing indicators. The data collected is plausible and shows interesting variation, and the indicator appears highly relevant to dementia care. Ten countries reported data in the pilot, but as many as seven other countries should be able to provide data. **Data should be collected from as many other countries as possible, with a view to including this indicator in Health at a Glance 2017.**