

Seasonal Adjustment - Monthly Diagnostic Waiting Times and Activity

Coverage

This paper assesses whether the monthly diagnostics waiting times and activity statistics should be seasonally adjusted.

Background

1. Statisticians have a professional duty to ensure that official statistics meet user needs and are published in a way that aids interpretation of trends. The Code of Practice for Official Statistics sets this out in Principle 8: “Prepare and disseminate commentary and analysis that aid interpretation, and provide factual information about the policy or operational context of official statistics.”
2. There is a need to assess whether this data can be seasonally adjusted in order to aid user interpretation of trends.

Identifying user needs

3. The requirements for this data were initially established in 2005 and have been reviewed regularly since then.
4. A collection was established using Unify2 to collect this data on a monthly basis from English providers of NHS diagnostic services.
5. The current publication allows NHS England and Department of Health to monitor performance against the 1% operational standard on a monthly basis.
6. The data are used by NHS managers throughout the service to identify where waiting lists have increased and where action needs to be taken. The current publication allows members of the public to compare waiting lists across several NHS trusts and to assess access to NHS diagnostic services.
7. The data are used by commissioners and providers to monitor diagnostic activity against their contracts. In addition, the data are used in the annual planning round to forecast activity for the upcoming year, which is based upon growth rates.

Diagnostic Waiting Measures

8. Four waiting measures were assessed as to whether they should be seasonally adjusted. These were the size of the total waiting list, median waiting time, number of patients waiting 6 or more weeks and the proportion of patients waiting 6 or more weeks.
9. Across all 4 measures, the quality of the seasonal adjustment was poor prior to April 2008. This is due to waiting times reducing considerably until March 2008 as a result of the introduction of the 6 week milestone from March 2008. As a consequence, the seasonal pattern observed in the data changes significantly from April 2008 onwards.
10. The output from the seasonal adjustment software indicated that there was moving seasonality in the data for all 4 measures, especially in particular months. Therefore, it was not sensible to seasonally adjust the entire time series when it is obvious that there is a change in the seasonal pattern from April 2008 and that data quality was not as good in the early years of the collection.
11. When restricting the seasonal adjustment to April 2008 onwards, there is a slight improvement. However, the resulting seasonally adjusted series is not very smooth and irregularity remains in the data despite seasonally adjusting for all 4 measures.
12. A quality assurance test applied to the seasonal adjustment of the number of patients waiting 6 or more weeks and the proportion of patients waiting 6 or more weeks confirmed that there was too much irregularity in the data. In addition, the output from the seasonal adjustment software highlighted problems when seasonally adjusting the median waiting time.

Diagnostic Activity

13. The quality of the seasonal adjustment applied to the diagnostic activity data was poor in the early years. This could be due to introduction of the 6 week milestone from March 2008 as stated above and data quality issues in the early years of publication.
14. When restricting the seasonal adjustment to April 2008 onwards, the resulting seasonal adjusted series is of good quality and passes all the quality assurance tests.
15. The seasonal adjustment is smooth, with the exception of 5 outliers that all relate to specific events that impacted upon diagnostic activity. These can easily be identified from the seasonally adjusted series.

16. The growth rate for 2012/13 compared to 2011/12 is 6.8% when using the seasonal adjusted data, compared to 7% when adjusting for working days. However, for 2013/14, growth rates vary significantly between the actual data, seasonally adjusted data and working day adjustments. For April – July 2013 compared to previous year, the actual data shows an increase of 7.4% compared to 5.5% when using the seasonally adjusted data and 3.7% when adjusting for working days. This would cause confusion for users if we were to start publishing 3 different growth rates for the same period. Therefore, it is not a good idea to seasonally adjust and use the resulting growth rates.

Conclusion

17. Our main users of the data need to use actual figures when assessing whether the operational standard has been met. NHS managers also need to use actual figures when monitoring waiting time and managing contracts with providers.

18. The diagnostic waiting list measures are not suitable for seasonal adjustment due to the effect that the 6 week milestone in March 2008 has on the seasonality of the data. In addition, the seasonal adjustment of these measures fails one of the quality assurance tests and indicates that there is too much irregularity in the data.

19. The diagnostic activity data results in good quality seasonal adjustment. However, it would cause confusion for all data users (especially NHS managers) if we were to start stating seasonally adjusted figures for activity and growth rates.

20. In our opinion, adjusting the activity data for working days is easier to understand by our data users. Although this does not result in a smooth series, from which outliers can be easily detected, it does aid with the interpretation of the year to date growth rates.

21. When consulting with users about whether to seasonally adjust, they expressed the same views as us that seasonally adjusting the activity data would make it difficult to interpret the data and that the working days adjustment was sufficient.

22. For this reason, we will not seasonally adjust the diagnostics waiting times and activity statistics.