

Assessment of compliance with the Code of Practice for Official Statistics

Statistics on Public Service Productivity

*(produced by the Office for National
Statistics)*

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About the UK Statistics Authority

The UK Statistics Authority is an independent body operating at arm's length from government as a non-ministerial department, directly accountable to Parliament. It was established on 1 April 2008 by the *Statistics and Registration Service Act 2007*.

The Authority's overall objective is to promote and safeguard the production and publication of official statistics that serve the public good. It is also required to promote and safeguard the quality and comprehensiveness of official statistics, and good practice in relation to official statistics.

The Statistics Authority has two main functions:

1. oversight of the Office for National Statistics (ONS) – the executive office of the Authority;
2. independent scrutiny (monitoring and assessment) of all official statistics produced in the UK.

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ASSESSMENT AND DESIGNATION

The *Statistics and Registration Service Act 2007* gives the UK Statistics Authority a statutory power to assess sets of statistics against the *Code of Practice for Official Statistics*. Assessment will determine whether it is appropriate for the statistics to be designated as National Statistics.

Designation as National Statistics means that the statistics comply with the *Code of Practice*. The *Code* is wide-ranging. Designation can be interpreted to mean that the statistics: meet identified user needs; are produced, managed and disseminated to high standards; and are explained well.

Designation as National Statistics should not be interpreted to mean that the statistics are always correct. For example, whilst the *Code* requires statistics to be produced to a level of accuracy that meets users' needs, it also recognises that errors can occur – in which case it requires them to be corrected and publicised.

Assessment reports will not normally comment further on a set of statistics, for example on their validity as social or economic measures. However, reports may point to such questions if the Authority believes that further research would be desirable.

Assessment reports typically provide an overview of any noteworthy features of the methods used to produce the statistics, and will highlight substantial concerns about quality. Assessment reports also describe aspects of the ways in which the producer addresses the 'sound methods and assured quality' principle of the *Code*, but do not themselves constitute a review of the methods used to produce the statistics. However the *Code* requires producers to "seek to achieve continuous improvement in statistical processes by, for example, undertaking regular reviews".

The Authority may grant designation on condition that the producer body takes steps, within a stated timeframe, to fully meet the *Code's* requirements. This is to avoid public confusion and does not reduce the obligation to comply with the *Code*.

The Authority grants designation on the basis of three main sources of information:

- i. factual evidence and assurances by senior statisticians in the producer body;
- ii. the views of users who we contact, or who contact us, and;
- iii. our own review activity.

Should further information come to light subsequently which changes the Authority's analysis, it may withdraw the Assessment report and revise it as necessary.

It is a statutory requirement on the producer body to ensure that it continues to produce the set of statistics designated as National Statistics in compliance with the *Code of Practice*.

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1 Summary of findings

1.1 Introduction

1.1.1 This is one of a series of reports¹ prepared under the provisions of the *Statistics and Registration Service Act 2007*². The Act requires all statistics currently designated as National Statistics to be assessed against the *Code of Practice for Official Statistics*³. The report covers the set of statistics reported in the following releases⁴, produced by the Office for National Statistics (ONS).

- *Public Service Output, Inputs and Productivity: Healthcare*; and
- *Public Service Output, Inputs and Productivity: Education*.

1.1.2 The Act also allows the National Statistician to request an assessment of other official statistics produced by ONS in order for them to gain National Statistics status. The inclusion of the statistics in the following release is in response to such a request:

- *Total Public Service Output, Inputs and Productivity*.

1.1.3 This report was prepared by the Authority's Assessment team, and approved by the Board of the Statistics Authority on the advice of the Head of Assessment.

1.2 Decision concerning designation as National Statistics

1.2.1 The Statistics Authority confirms that the statistics listed in 1.1.1 are designated as National Statistics, and has determined that the statistics in 1.1.2 can be designated as a new National Statistics product, subject to ONS implementing the enhancements listed in section 1.5 and reporting them to the Authority by April 2012.

1.3 Summary of strengths and weaknesses

1.3.1 ONS has made progress with the difficult task of measuring public service productivity and has produced a direct measure of productivity change for nearly two thirds of public services (by expenditure). The education and healthcare measures have been adjusted to take account of changes in the quality of service.

1.3.2 The public service productivity articles include some well written commentary that explains the components of change and some of the limitations of the statistics. Despite this, some users told us that it is difficult to interpret the changes in the statistics. In the media, the statistics are often presented as though they were a direct measure of performance, efficiency or value for money.

1.3.3 Many of the direct measures of the output of publicly funded services have been adopted in the National Accounts, but the use of quality-adjusted

¹ <http://www.statisticsauthority.gov.uk/assessment/assessment-reports/index.html>

² http://www.opsi.gov.uk/Acts/acts2007/pdf/ukpga_20070018_en.pdf

³ <http://www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html>

⁴ <http://www.ons.gov.uk/ons/guide-method/ukcemga/publications-home/publications/index.html>

measures is extremely limited and this situation is unlikely to change. Elsewhere, there is interest in the statistics, but the exact uses are unclear.

1.4 Detailed recommendations

1.4.1 The Assessment team identified some areas where it felt that ONS could strengthen its compliance with the *Code*. Those which the Assessment team considers essential to enable designation as National Statistics are listed in section 1.5. Other suggestions, which would improve the statistics and the service provided to users, but which are not formally required for their designation, are listed at annex 1.

1.5 Requirements for designation as National Statistics

Requirement 1	Investigate and document the use made of statistics on public service productivity (para 3.2).
Requirement 2	Publish the plans for making changes to these statistics following the decision to reduce the resources assigned to them (para 3.3).
Requirement 3	Seek feedback from users regarding the content, presentation and timing of the releases and publish information about users' experiences (para 3.4).
Requirement 4	Ensure that changes made to methods are clearly announced in advance of the changed statistics (para 3.5).
Requirement 5	Publish a revisions policy for these statistics (para 3.6).
Requirement 6	Publish a clear and coherent description of the methods used to produce the statistics on public service productivity (para 3.9). As part of this requirement, explain the methods used to carry out the quality adjustment (para 3.19).
Requirement 7	Publish a fuller description of data sources, drawing attention to their strengths and limitations (para 3.10). As part of this requirement, ensure that the Statement of Administrative Sources identifies which sources are used to compile each set of public service productivity statistics and what arrangements are in place for auditing the quality of the data (para 3.37).
Requirement 8	Assess the extent to which the quality of the statistics on public service productivity meets the needs of users and review whether it is possible to

meet these needs adequately given the decision to cease any future development of these statistics (para 3.11).

- Requirement 9** Review and fully document the quality assurance processes and make sure that those carrying out quality assurance are clear about what is expected of them (para 3.13).
- Requirement 10** Explain which output activities are not measured and what proportion of expenditure they represent, and explain the rationale for the assumption that non-measured activities move in the same way as measured activities (para 3.17).
- Requirement 11** Review the resources assigned to this work to ensure that they are sufficient to meet the standards of the *Code* (para 3.28).
- Requirement 12** Include additional information about the quality, including strengths and limitations, of the statistics presented in the public service productivity releases, and relate this information to the range of potential uses (para 3.29).
- Requirement 13** Improve the commentary in the releases so that it aids user interpretation of the statistics (para 3.30).
- Requirement 14** Disseminate the statistics in forms that encourage analysis and re-use and ensure that appropriate documentation is produced to accompany any datasets released (para 3.31).
- Requirement 15** Ensure that pre-release access lists are kept under close review so that access is only granted where absolutely necessary (para 3.35).
- Requirement 16** Publish a timetable for twelve months ahead (para 3.36).

2 Subject of the assessment

- 2.1 The case for trying to measure the productivity of public services was set out in the final report of the Atkinson Review⁵ in 2005, and accepted by ONS and by the Government. However, such measurement is extremely difficult due to the absence of well-defined units of output that are bought and sold at prices determined by the market. Historically, the solution both in the UK and elsewhere was simply to assume that the volume of service output is equal to the volume of inputs and that both measures therefore grow at the same rate. Since productivity is normally calculated as the ratio of output to inputs, this meant that public service ‘productivity’ never changed.
- 2.2 The *1995 European System of Accounts*⁶ (ESA95), consistent with the *1993 System of National Accounts*⁷ (SNA93), proposed that instead of assuming public service output is equal to inputs, it should be measured directly. EU member states were subsequently obliged to implement direct volume measures into their national accounts by 2006.
- 2.3 The Atkinson Review - which was commissioned by the then National Statistician - made over 50 recommendations on how to measure the productivity of publicly funded services. One of the main conclusions was that output should be adjusted for quality: in effect taking account of the outcome for service users rather than just the quantity of people receiving a particular service. The UK Centre for the Measurement of Government Activity (UKCeMGA) was set up within ONS in 2005, in order to take forward the recommendations.
- 2.4 The statistics in this assessment are released as regular articles. They present indexed estimates of changes in inputs, output and productivity. The education and healthcare articles cover the two largest areas of expenditure on public services and the total productivity article covers all publicly funded services, with separate estimates for the main service areas by expenditure, including social care, public order and safety⁸, police, defence, and social security administration. The education and healthcare statistics are adjusted for quality, as envisaged by the Atkinson Review.
- 2.5 The directly-measured estimates of output produced by UKCeMGA are used by ONS in the National Accounts, but with one minor exception in the area of education, there is no adjustment for quality. It was originally intended that quality adjusted output measures would be used, as encouraged by ESA95, but this is not required by the latest revision of ESA (2010) - making it unlikely that quality adjustment will be included in the National Accounts in the foreseeable future. Quality adjusted output measures are still produced to inform other users of the statistics. The UKCeMGA input measures are not

⁵ <http://www.ons.gov.uk/ons/guide-method/method-quality/specific/public-sector-methodology/atkinson-review/final-report/index.html>

⁶ <http://circa.europa.eu/irc/dsis/nfaccount/info/data/esa95/en/titelen.htm>

⁷ <http://unstats.un.org/unsd/nationalaccount/sna.asp>

⁸ Public order and safety covers the fire, prison and probation services.

currently used in the National Accounts, but we have been told that this is possible in the future.

2.6 The evidence we have seen suggests that the other main uses of the statistics are:

- for public debate - they generate reports in the press and other media and are discussed in Parliament, for example hospital productivity⁹ was discussed by the Public Accounts Committee in early 2011;
- by government departments such as HM Treasury, which uses the inputs data to assess spending on public services, and by the Department for Work and Pensions (DWP), which uses the estimates of productivity for social security administration in its business planning and external reporting¹⁰;
- in reports produced by the National Audit Office¹¹ and the Office for Budget Responsibility¹²; and
- as research material by academics and other analysts: for example the Institute for Fiscal Studies used ONS's estimates in an election briefing note¹³ to show the effect of the increase in government spending on productivity.

2.7 The total cost in staff time to produce the three articles, including development work, was estimated to be approximately £200,000 in 2009-10. This cost excludes the resource required to produce the output measures used in the National Accounts. The amount of resource allocated to work on public service productivity will be reduced following ONS's consultation on its work programme¹⁴ held at the end of 2010.

⁹ <http://www.parliament.uk/business/committees/committees-a-z/commons-select/public-accounts-committee/news/nhs-productivity-report/>

¹⁰ <http://www.dwp.gov.uk/docs/productivity-paper-2010.pdf>

¹¹ http://www.nao.org.uk/publications/1011/nhs_hospital_productivity.aspx

¹² <http://budgetresponsibility.independent.gov.uk/fiscal-sustainability-report-july-2011/>

¹³ <http://www.ifs.org.uk/bns/bn92.pdf>

¹⁴ <http://www.ons.gov.uk/ons/about-ons/consultations/closed-consultations/2010/work-programme-consultation/index.html>

3 Assessment findings

Principle 1: Meeting user needs

The production, management and dissemination of official statistics should meet the requirements of informed decision-making by government, public services, business, researchers and the public.

- 3.1 ONS engages with government departments, which are both users of the statistics and suppliers of data, via Functional Boards (for education and healthcare) and more widely through the Departmental Output and Productivity Advisory Group (DOPAG) which meets on an ad hoc basis. ONS also engages with external experts and service providers through the UKCeMGA Advisory Board, which has an independent Chair. Members of UKCeMGA meet regularly with ONS users of the statistics in the National Accounts and keep in touch with a wider range of stakeholders by producing news bulletins¹⁵ and hosting seminars.
- 3.2 The users of public service productivity statistics are listed in the various Summary Quality Reports¹⁶ produced alongside these statistics. However, these reports provide little information about the use made of the statistics or the types of decision they inform. As part of the designation as National Statistics, ONS should investigate and document the use made of statistics on public service productivity¹⁷ (Requirement 1).
- 3.3 The public service productivity releases were part of ONS's consultation on its work programme at the end of 2010. This consultation, run in response to the 2010 Spending Review, sought to identify non-statutory outputs produced by ONS for which resources could be reduced. ONS's response¹⁸ to the findings from this consultation states that there will be a reduction in the resource allocated to measuring Public Service Productivity: ONS will no longer develop methods, and will review the scope of the statistics and seek more efficient production arrangements. No further statement has been published to explain to users the effect that this will have on the statistics, although the Advisory Board was due to meet in October to consider these issues. As part of the designation as National Statistics, ONS should publish its plans for making changes to these statistics following the decision to reduce the resources assigned to them¹⁹ (Requirement 2).
- 3.4 ONS has carried out several consultations on the methods used to compile the public service productivity statistics and the results of these consultations²⁰ are published on the UKCeMGA microsite²¹ on ONS's website. However, ONS has

¹⁵ <http://www.ons.gov.uk/ons/guide-method/ukcemga/publications-home/monthly-bulletins/monthly-bulletins.html>

¹⁶ <http://www.ons.gov.uk/ons/guide-method/method-quality/quality/quality-information/economic-statistics/index.html>

¹⁷ In relation to Principle 1, Practice 2 of the *Code of Practice*

¹⁸ <http://www.ons.gov.uk/ons/about-ons/consultations/closed-consultations/2010/work-programme-consultation/index.html>

¹⁹ In relation to Principle 1, Practice 3 and Protocol 1, Practice 7 of the *Code of Practice*

²⁰ <http://www.ons.gov.uk/ons/guide-method/ukcemga/about-ukcemga/consultations/index.html>

²¹ <http://www.ons.gov.uk/ons/guide-method/ukcemga/index.html>

not consulted with users on the content, presentation or timing of the releases themselves. In ONS's 2010 consultation on its work programme, users were asked about the impact of discontinuing or reducing the scope of particular non-statutory outputs, including statistics on public service productivity. ONS published a high-level response to this consultation but no specific user feedback has been published. As part of the designation as National Statistics, ONS should seek feedback from users regarding the content, presentation and timing of the releases and publish information about users' experiences²² (Requirement 3).

²² In relation to Principle 1, Practice 5 of the *Code of Practice*

Principle 2: Impartiality and objectivity

Official statistics, and information about statistical processes, should be managed impartially and objectively.

- 3.5 When major changes are made to methods, ONS produces a methods article in advance of the statistical release, to provide details of the changes being made and an estimate of the likely impact. For example, changes to methods used in *Healthcare*, published on 24 March 2010 were published in an article²³ on 2 February. For smaller changes, such as the change in the coverage of *Education* to include publicly funded further education for all ages, details are included in the revisions section of the relevant release. Although this information is available, no clear announcement is made to draw user attention towards the changes made and the details contained within the release itself are difficult to find. As part of the designation as National Statistics, ONS should ensure that changes made to methods are clearly announced in advance of the changed statistics²⁴ (Requirement 4).
- 3.6 ONS told us that the statistics on public service productivity are revised in line with the general ONS revisions policy²⁵. This states that ONS will publish a general statement describing its practice on revisions and that key outputs that are subject to scheduled revisions will have a specific policy. We were unable to find either a general statement or a specific policy covering these statistics. As part of the designation as National Statistics, ONS should publish a revisions policy for *Education*, *Healthcare* and *Total Productivity*²⁶ (Requirement 5). We suggest that ONS provide a link to the revisions policy from each release.
- 3.7 In 2009, an error was discovered in *Total Productivity*. The release²⁷ was reissued with a cover sheet detailing the extent of the errors and known users were notified by email. A note²⁸ was also included in *Economic and Labour Market Review* to highlight the error to other users. In 2011, an error was discovered in the ‘triangulation’²⁹ section of *Healthcare*. The description of trends in alcohol consumption failed to take account of a change in method which had caused an apparent step change in the level of alcohol consumption. The error was first reported³⁰ by Straight Statistics and ONS acted quickly to issue a corrected version of the release. In addition to emailing known users, the producer team also contacted the media organisations which had reported

²³ <http://www.ons.gov.uk/ons/external-links/articles-and-summaries/articles/improving-the-method-used-to-calculate-the-volume-of-healthcare-inputs.html>

²⁴ In relation to Principle 2, Practice 4 of the *Code of Practice*

²⁵ <http://www.ons.gov.uk/ons/guide-method/revisions/corporate-statistical-policy/index.html>

²⁶ In relation to Principle 2, Practice 6 of the *Code of Practice*

²⁷ <http://www.ons.gov.uk/ons/rel/psa/public-service-productivity/total-public-service-output-and-productivity/total-public-service-output-and-productivity-.pdf>

²⁸ <http://www.ons.gov.uk/ons/rel/elmr/economic-and-labour-market-review/no--9--september-2009/economic---labour-market-review.pdf>

²⁹ See para 3.19 for an explanation of triangulation. The error did not affect the estimates of productivity change.

³⁰ <http://www.straightstatistics.org/article/drinking-statistics-misrepresented-again> (5 April 2011)

the incorrect statistics. The prompt and straightforward response to the error was noted by Straight Statistics in a subsequent blog³¹.

³¹ <http://www.straightstatistics.org/blog/2011/04/18/we-got-it-wrong-women%E2%80%99s-drinking-admits-ons> (18 April 2011)

Principle 3: Integrity

At all stages in the production, management and dissemination of official statistics, the public interest should prevail over organisational, political or personal interests.

- 3.8 No incidents of political pressures, abuses of trust or complaints relating to professional integrity, quality or standards were reported to or identified by the Assessment team.

Principle 4: Sound methods and assured quality

Statistical methods should be consistent with scientific principles and internationally recognised best practices, and be fully documented. Quality should be monitored and assured taking account of internationally agreed practices.

- 3.9 ONS has published a number of articles about the methods used to produce *Education, Healthcare and Total Productivity* and a 2008 document³² on the methods used for the National Accounts, but the statistical releases themselves contain very little information about methods, and there is no document that users can consult for a consolidated explanation. The articles document both changes that have been made to methods and proposed or possible changes, and it is not clear which changes have actually been implemented. As part of the designation as National Statistics, ONS should publish a clear and coherent description of the methods used to produce the statistics on public service productivity³³ (Requirement 6). (See also para 3.19).
- 3.10 ONS has published frameworks³⁴ for identifying sources of statistical errors and for assessing whether the methods used to estimate public service output and productivity are fit for purpose. Each paper describes the issues in general terms and then applies the framework to a specific worked example. The extent to which these frameworks have been applied to the statistics in this assessment is unclear. In particular, UKCeMGA articles rarely discuss the quality of source data. A very wide range of administrative and survey data is used, but these are not listed nor described in any detail. As part of the designation as National Statistics, ONS should publish a fuller description of data sources, drawing attention to their strengths and limitations³⁵ (Requirement 7). (See also para 3.37)
- 3.11 Some users of these statistics told us that they find the statistics difficult to interpret (see para 3.30) and both users and suppliers raised concerns about the methods used and assumptions made in the compilation of these statistics. The Eurostat decision to remove quality adjustment from the most recent *ESA* and the ONS decision to cease further methodological development raise questions about how the statistics can best be used in the future. We were told that, in ONS's view, the main gains from the work have already been achieved and further development would be subject to diminishing returns. As part of the designation as National Statistics, ONS should assess the extent to which the quality of the statistics on public service productivity meets the needs of users, and review whether it is possible to meet these needs adequately given the decision to cease any future development of these statistics³⁶ (Requirement 8).
- 3.12 Quality assurance of the statistics is carried out internally within ONS; by data suppliers; and by a quality assurance panel that is set up for each publication:

³² <http://www.ons.gov.uk/ons/external-links/articles-and-summaries/articles/documentation-of-ukcemga-methods-used-for-national-accounts.html>

³³ In relation to Principle 4, Practice 1 of the *Code of Practice*

³⁴ <http://www.ons.gov.uk/ons/guide-method/ukcemga/publications-home/publications/archive/index.html>

³⁵ In relation to Principle 4, Practice 2 and Protocol 3, Practice 5 of the *Code of Practice*

³⁶ In relation to Principle 4, Practice 2 of the *Code of Practice*

- within ONS, there is no fixed process or guidance for quality assurance although the team within UKCeMGA that has produced the statistics may indicate the most important areas for the team doing the checking. Quality assurance is accounted for in the production timetable and records are kept detailing who has been involved;
- the statistics are sent to all suppliers of the data via a central 'Atkinson contact' in each department. Two suppliers told us that they weren't sure how the statistics in the release were calculated as they did not appear to have been derived from the data that they had provided;
- final high-level quality assurance of the overall release is carried out by members of the quality assurance panel. The panel is made up of members of UKCeMGA's Advisory Board and data suppliers.

3.13 The error discovered in the triangulation section of *Healthcare* in 2011 (see para 3.7) was attributed to poor communication between ONS and those involved in quality assuring the statistics. As part of the designation as National Statistics, ONS should review and fully document the quality assurance processes and make sure that those carrying out quality assurance are clear about what is expected of them³⁷ (Requirement 9).

Inputs

3.14 Data for measuring the volume of inputs cover all of the factors of production relating to each service, i.e. labour, goods and services and capital. Direct measures, for example, hours of labour input, are used where available. In other areas, a volume measure is obtained by dividing current expenditure by an appropriate deflator. Often, ONS calculates a composite deflator using detailed published financial returns from UK Administrations, and applies this to an overall current expenditure figure.

3.15 A chapter of the Atkinson Review examined shortcomings in the input measures. These included problems due to the complexity of the data flows³⁸; issues regarding the definition and classification of government spending³⁹; and a lack of documentation to explain large revisions or year on year changes. Some of these problems have been resolved with the introduction of HMT's COINS⁴⁰ database. ONS published an article⁴¹ in 2008 summarising improvements that had been made to central government expenditure data but noting that some issues were still outstanding. We suggest that ONS update this paper and extend it to include local government expenditure.

Outputs

³⁷ In relation to Principle 4, Practices 3 and 4 of the *Code of Practice*

³⁸ Data have to be collated from a huge number of sources (central government departments, devolved administrations, local authorities, NHS Trusts). Those initially responsible for compiling the data were often unaware of how they would ultimately be used, while those further along the statistical value chain found it difficult to get answers to their queries.

³⁹ While data suppliers broke their expenditure down into economic categories (for example, pay or goods and services), a team at the Treasury was responsible for assigning the expenditure to functional categories (for example, primary schools or secondary schools).

⁴⁰ http://www.hm-treasury.gov.uk/psr_coins_about.htm

⁴¹ <http://www.ons.gov.uk/ons/external-links/articles-and-summaries/articles/improving-the-quality-of-central-government-expenditure-data-in-the-national-accounts--a-2008-update.html>

- 3.16 According to the 2011 article on Total Productivity, some 64 per cent of public services (by expenditure) have their output measured by direct indicators – the rest follow the ‘output=inputs’ convention. The directly measured outputs are healthcare, education, adult social care, social security administration and public order and safety. Police and defence services are among those measured by inputs, while children’s social care is a mixture of the two. The reason given for the use of inputs in the case of police and defence spending is that services are provided to the community as a whole and not to identifiable individuals. This is in line with international guidance from *SNA93* and *ESA95*.
- 3.17 For many service areas, there are insufficient data to provide a direct measure of all outputs. In these cases, ONS assumes that the non-measured activities move in the same way as the measured activities. ONS does not provide any evidence to justify this assumption. As part of the designation as National Statistics ONS should explain which output activities are not measured and what proportion of expenditure they represent, and explain the rationale for the assumption that non-measured activities move in the same way as measured activities⁴² (Requirement 10).

Quality adjustment

- 3.18 Output measures that are based on quantities - for example pupil or patient numbers - may not fully capture changes to the outcomes for recipients of the service. This could give a misleading impression of productivity. For example, it may be possible for the quality of patient care to improve, even where there is no change in the measured volume of inputs and outputs. Only education and healthcare have been quality adjusted to date, accounting for some 50 per cent of public services by expenditure.
- Fourteen separate adjustments are made for various healthcare activities, ranging across hospital and primary care and including a small element for patient experience as well as outcomes. These measures were developed by the Centre for Health Economics at York University and the Department of Health.
 - Education has one major quality adjustment: the attainment of 16 year olds in GCSE or equivalent examinations. Much therefore rests on the extent to which this measure is a reasonable proxy for the quality of the education system as a whole⁴³. There is also an implicit assumption that change is endogenous to the service area and does not result from external factors such as changes in parental behaviour.
- 3.19 The measures used to adjust for quality are described in *Education* and *Healthcare* and there are helpful charts comparing the quality adjusted output with the unadjusted output, but the method of quality adjustment is not described. Links are provided from *Healthcare* to two articles^{44,45} produced by the Department of Health that give some information about how quality

⁴² In relation to Principle 4, Practice 1 and Principle 8, Practice 1 of the *Code of Practice*

⁴³ The Atkinson Review recommended the introduction of quality measures for younger pupils and for over 16s, and an adjustment to reflect the value of education for future earnings.

⁴⁴ http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4124267.pdf

⁴⁵ http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsStatistics/DH_079021

adjustment could be implemented, but ONS does not make clear if these are the methods it uses. As part of implementing Requirement 6, ONS should explain the methods used to carry out quality adjustment.

Triangulation

- 3.20 *Education* and *Healthcare* present additional evidence about trends in their respective subject areas – for example, teaching standards or the prevalence of smoking. The aim is to provide a context for the estimates in each release and an opportunity to judge whether the estimates are corroborated by other external evidence. This process of triangulation was an important recommendation from the Atkinson Review: ‘...no single number, however carefully constructed, can fully capture the performance of complex services with multiple objectives. Productivity change should be interpreted in the light of a range of other information’. We consider this process to be an example of good practice.
- 3.21 Triangulation in *Education* includes 13 indicators from external sources, with an assessment against each one of the extent to which it is consistent with the trend shown by the relevant ONS measure, and an assessment (high, medium or low) as to the likely extent of influence of the education sector on the indicator. In *Healthcare*, there are 17 ‘findings’ and ‘external factors’. It is difficult for the non-expert user to form a view as to whether each individually serves to corroborate the ONS results⁴⁶, and very difficult to decide what they mean collectively. ONS told us that it does not always have sufficient in-house knowledge to discuss such findings and draw conclusions. In future it may confine triangulation to attempts by other bodies to measure productivity or related measures, rather than gather a wider range of supporting evidence.
- 3.22 In our view, triangulation should continue to be used to examine the plausibility of the estimates of changes to productivity. We suggest that ONS expand the triangulation process to cover the public services included in *Total Productivity* and explore other ways of making use of the contextual information. For example, a number of experts might be asked to provide their views about the likely scale and direction of productivity changes, independently of ONS’s calculations, and based on the same type of evidence that is currently used for triangulation purposes.
- 3.23 The Atkinson Review states: ‘It is essential that the measures employed in the National Accounts should command support from appropriate service experts and from end users’. We think that this is especially true in relation to quality adjustments and triangulation, both of which require a degree of subjective judgement. UKCeMGA’s Advisory Board and Functional Boards include many prominent economists and statisticians but relatively few service providers and end users. We suggest that ONS strengthen the representation of service providers and end users.

⁴⁶ For example, in *Healthcare*, it is said that a fall in smoking prevalence could increase or decrease output and may reflect an improvement in quality.

National and international considerations

- 3.24 ONS has been working with the devolved administrations to obtain data from each part of the UK for use in its calculations. However, there are still areas - for example, quality adjustment in healthcare – where the method implicitly assumes that the rest of the UK follows the same trend as England.
- 3.25 The Atkinson Review stressed the importance of joint learning and development with other countries and the need for international comparability. ONS has done much to establish links with Eurostat, OECD and the statistical offices of Member States and we were told that there has been a great deal of international interest in the methods underpinning the statistics produced by ONS. However, the benefit ONS has been able to derive from these relationships may be less than originally hoped, because other countries have made less progress in developing direct measures of public service output. In addition, some countries only measure labour productivity, instead of taking other types of input and output into account. International comparisons therefore need to be made with great care, although ONS told us that expert commentators are well aware of the problems. We suggest that ONS produce guidance for non-expert users about the extent to which international comparisons of output and productivity are feasible, or direct users to where this information can be found.

Principle 5: Confidentiality

Private information about individual persons (including bodies corporate) compiled in the production of official statistics is confidential, and should be used for statistical purposes only.

3.26 ONS told us that all of the data supplied for use in the compilation of statistics on public service productivity are highly aggregated and anonymised so that no information about individuals or businesses can be disclosed. ONS does not hold any confidential data in relation to these statistics.

Principle 6: Proportionate burden

The cost burden on data suppliers should not be excessive and should be assessed relative to the benefits arising from the use of the statistics.

3.27 The burden placed on data suppliers in the production of *Education, Healthcare* and *Total Productivity* is minimal due to the almost exclusive use of administrative sources. UKCeMGA has recently reviewed the data sources used and has confirmed that they are collected for the suppliers' own use. UKCeMGA told the Assessment team that it has received no negative comments from suppliers about the burden placed on them.

Principle 7: Resources

The resources made available for statistical activities should be sufficient to meet the requirements of this Code and should be used efficiently and effectively.

3.28 UKCeMGA is currently experiencing a period of high staff turnover resulting in a relatively inexperienced team and a number of unfilled posts. We were told that while resources are considered to be sufficient to produce these statistics to the standards of the *Code* in the near term, future resource levels and outputs are being reviewed as a result of the recent reduction in the budget following the 2010 work programme consultation. As part of the designation as National Statistics, ONS should review the resources assigned to this work to ensure that they are sufficient to meet the standards of the *Code*⁴⁷ (Requirement 11).

⁴⁷ In relation to Principle 7, Practices 1,4,5 and 6 of the *Code of Practice*

Principle 8: Frankness and accessibility

Official statistics, accompanied by full and frank commentary, should be readily accessible to all users.

- 3.29 The Atkinson Review stressed that ‘...it is essential for ONS and others to make clear in publications the limitations of measurement and the purposes to which analysis may properly be put’. The articles on public service productivity contain information about the magnitude of revisions, but no other measures or descriptions of quality are included. There is more information in the relevant Summary Quality Reports but these do not discuss quality issues in relation to the uses of the statistics. They are held on a separate part of the ONS website and are not referenced from the articles. As part of the designation as National Statistics, ONS should include additional information about the quality, including strengths and limitations, of the statistics presented in *Education*, *Healthcare* and *Total Productivity*, and relate this information to the range of potential uses⁴⁸ (Requirement 12).
- 3.30 Each article contains commentary that describes trends in the statistics and explores the components of change. However, very little contextual information is given that explains what the statistics are used for or how they can be interpreted. We received comments from users in government departments and the media who felt that the number of caveats attached to the statistics made them difficult to interpret, and that it was hard to draw out anything meaningful for the non-expert user. Other commentators simply assume that productivity is the same as performance, efficiency or value for money: the terms are often used interchangeably in media coverage of the statistics. As part of the designation as National Statistics, ONS should improve the commentary in the releases so that it aids user interpretation of the statistics⁴⁹ (Requirement 13). We suggest that in meeting this requirement, ONS should consider the points detailed in annex 2.
- 3.31 The public service productivity articles are available in pdf format only. No datasets or tables are released in a re-usable format such as a spreadsheet, and we were told that there are no plans to do this. The producer team told us that it would make the datasets available upon request and, as part of ONS’s new website, users may be able to access the statistics used to produce the charts in the articles. As part of the designation as National Statistics, ONS should disseminate the statistics in forms that encourage analysis and re-use and ensure that appropriate documentation is produced to accompany any datasets released⁵⁰ (Requirement 14).
- 3.32 Some users told us that they would like access to statistics at a finer level of detail. The producer team told us that it is unable to provide users with any more detail due to the lack of consistency between the input and output data available and that it publishes statistics at the most detailed level possible. We suggest that ONS explain the limitations of the data to users so they understand why more detailed statistics are not available.

⁴⁸ In relation to Principle 8, Practice 1 of the *Code of Practice*

⁴⁹ In relation to Principle 8, Practice 2 of the *Code of Practice*

⁵⁰ In relation to Principle 8, Practice 6 of the *Code of Practice*,

Protocol 1: User engagement

Effective user engagement is fundamental both to trust in statistics and securing maximum public value. This Protocol draws together the relevant practices set out elsewhere in the Code and expands on the requirements in relation to consultation.

3.33 The requirements for this Protocol are covered elsewhere in this report.

Protocol 2: Release practices

Statistical reports should be released into the public domain in an orderly manner that promotes public confidence and gives equal access to all, subject to relevant legislation.

- 3.34 The *Code* requires National Statistics releases to be issued at 9.30am on the day of publication. ONS's website systems historically did not enable releases to be published simultaneously, which meant that there was sometimes a delay beyond 9.30am. ONS reviewed this matter as part of its web development programme, and has informed the Statistics Authority that its website is now able to issue National Statistics releases at 9.30am.
- 3.35 The pre-release access lists for *Education*, *Healthcare* and *Total Productivity* contain 15, 21 and 34 individuals, respectively. ONS told us that these lists are reviewed prior to each publication and are kept as short as possible. The pre-release access list for *Total Productivity* is long as pre-release access is given to all suppliers of data used in the release. As part of the designation as National Statistics, ONS should ensure that pre-release access lists for *Education*, *Healthcare* and *Total Productivity* are kept under close review so that access is only granted where absolutely necessary⁵¹ (Requirement 15).
- 3.36 ONS makes the statistics available via the National Statistics Publication Hub but does not currently provide a 12-month advance timetable for these releases. As part of the designation as National Statistics, ONS should publish a timetable for *Education*, *Healthcare* and *Total Productivity* for twelve months ahead⁵² (Requirement 16).

⁵¹ In relation to Protocol 2, Practice 7 of the *Code of Practice*

⁵² In relation to Protocol 2, Practice 2 of the *Code of Practice*

Protocol 3: The use of administrative sources for statistical purposes

Administrative sources should be fully exploited for statistical purposes, subject to adherence to appropriate safeguards.

3.37 A range of administrative sources is used in the compilation of *Education, Healthcare* and *Total Productivity*. These sources and the data they contain are checked for their suitability by both the Functional Boards and the Advisory Board but no comprehensive document detailing the sources used and their quality exists. ONS has prepared a Statement of Administrative Sources⁵³; however, none of the public service productivity releases are currently listed against any of the administrative sources included. In meeting Requirement 7, ONS should ensure that its Statement of Administrative Sources identifies which sources are used to compile *Education, Healthcare* and *Total Productivity* and what arrangements are in place for auditing the quality of the data.

⁵³ <http://www.ons.gov.uk/ons/guide-method/the-national-statistics-standard/code-of-practice/statement-of-administrative-sources/index.html>

Annex 1: Suggestions for improvement

A1.1 This annex includes some suggestions for improvement to the statistics on public service productivity, in the interest of the public good. These are not formally required for designation, but the Assessment team considers that their implementation will improve public confidence in the production, management and dissemination of official statistics.

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|---------------------|--|
| Suggestion 1 | Provide a link to the revisions policy from each release (para 3.6). |
| Suggestion 2 | Update the 2008 paper on central government expenditure data and extend it to include local government expenditure (para 3.15). |
| Suggestion 3 | Expand the triangulation process to cover <i>Total Productivity</i> and explore other ways of making use of the contextual information (para 3.22). |
| Suggestion 4 | Strengthen the representation of service providers and end users on UKCeMGA's Advisory Board and Functional Boards (para 3.23). |
| Suggestion 5 | Produce guidance for non-expert users about the extent to which international comparisons of output and productivity are feasible, or direct users to where this information can be found (para 3.25). |
| Suggestion 6 | Consider the points detailed in annex 2 in meeting Requirement 13 (para 3.30). |
| Suggestion 7 | Explain the limitations of the data to users so they understand why more detailed statistics are not available (para 3.32). |

Annex 2: Compliance with Standards for Statistical Releases

- A2.1 In October 2010, the Statistics Authority issued a statement on Standards for Statistical Releases⁵⁴. Whilst this is not part of the *Code of Practice for Official Statistics*, the Authority regards it as advice that will promote both understanding and compliance with the *Code*. In relation to the statistical releases associated with Public Service Productivity Statistics, this annex comments on compliance with the statement on standards.
- A2.2 In implementing any Requirements of this report (at paragraph 1.5) which relate to the content of statistical releases, we encourage the producer body to apply the standards as fully as possible.

Appropriate identification of the statistics being released

- A2.3 The titles of the releases do not refer to the coverage of the statistics or the point in time to which they relate.
- A2.4 The releases contain no statement about the frequency of the release or the frequency with which the statistics will be updated.
- A2.5 All of the releases contain the ONS logo and both *Healthcare* and *Education* contain the National Statistics logo. The *Healthcare* and *Education* releases are presented using consistent formatting but *Total Productivity* is presented in a different format. The releases are presented as articles rather than as statistical bulletins.
- A2.6 All of the releases make it clear that they are ONS publications and the names of the article authors are provided on the first page. Full contact details for the responsible statistician are provided.
- A2.7 Both *Healthcare* and *Education* include a single sentence to outline what the release includes. No such account is included at the beginning of *Total Productivity*.

Include commentary that is helpful to the non-expert and presents the main messages in plain English

- A2.8 Both *Healthcare* and *Education* place the key messages at the beginning of the article though an earlier explanation of how inputs and outputs relate to productivity would make the messages clearer. *Total Productivity* also includes a section on key points but the extra detail in this release makes the main messages harder to identify.
- A2.9 The language used in all of the releases is clear and technical terms are explained. A glossary and table of contents would help users further.
- A2.10 All the releases contain commentary which examines the components of change over time. However, since these statistics are difficult to interpret, it would be helpful if the commentary went further to explain the importance and relevance of the statistics and the uses that could be made of them.

⁵⁴ <http://www.statisticsauthority.gov.uk/news/standards-for-statistical-releases.html>

Use language that is impartial, objective and professionally sound

A2.11 The language used is impartial.

A2.12 The descriptive statements are consistent with the statistics presented.

A2.13 The descriptions of trends in the statistics are professionally sound. Annual average percentage change across the whole period for which data is available is presented as the main measure of change but it is not clear why this measure or time period has been chosen. There is no qualitative or quantitative information about quality in any of the releases.

Include information about the context and likely uses

A2.14 There is no contextual information presented alongside these statistics to indicate how and for what purposes they might be used.

A2.15 No information is given in any of the releases about the quality and reliability of the statistics in relation to the use made.

Include, or link to, appropriate metadata

A2.16 Links are given to articles detailing various aspects of the methods, but there is currently no comprehensive documentation of methods, assumptions and definitions. The articles do not contain, or link to, information about the data sources used to compile the statistics.

A2.17 *Education* and *Healthcare* contain a triangulation section which presents contextual information relevant to the service area, although no conclusion is drawn about the extent to which the trends described support the findings in the article. The total productivity article explores the relationship between the UKCeMGA figures and other productivity estimates produced by ONS. These differ in concept and coverage.

A2.18 Users are not advised whether similar statistics are available for different countries.

A2.19 All the articles appear to present fully consistent time series. A revisions section is used to highlight any changes to the statistics and explains whether this change is due to the inclusion of updated data or due to changes to the methods.

A2.20 The releases do not make it clear which statistics are subject to revision.

Annex 3: Summary of assessment process and users' views

A3.1 This assessment was conducted from June to September 2011.

A3.2 The Assessment team – Jill Barelli and Kat Pegler – agreed the scope of and timetable for this assessment with representatives of ONS in June. The Written Evidence for Assessment was provided on 24 June. The Assessment team subsequently met ONS during July to review compliance with the *Code of Practice*, taking account of the written evidence provided and other relevant sources of evidence.

Summary of users contacted, and issues raised

A3.3 Part of the assessment process involves our consideration of the views of users. We approach some known and potential users of the set of statistics, and we invite comments via an open note on the Authority's website. This process is not a statistical survey, but it enables us to gain some insights about the extent to which the statistics meet users' needs and the extent to which users feel that the producers of those statistics engage with them. We are aware that responses from users may not be representative of wider views, and we take account of this in the way that we prepare assessment reports.

A3.4 The Assessment team received 29 responses from the users and suppliers of these statistics. The respondents were grouped as follows:

Government	7
Academia	6
Media	3
International organisations	2
Other	3
Suppliers	8

A3.5 Some users found the statistics of great interest and were happy with the interactions they had with UKCeMGA staff. Others expressed concerns about whether the statistics were useful or meaningful; about the apparent conflict between the needs of National Accounts and other users; and about the methodology. Some users were unsure how to interpret the statistics and would like a more detailed explanation of the methods used and the limitations of the statistics to help them with this. Improved explanation of the methods was also requested by individuals who were users of the methodology rather than the statistics themselves. Some would also like to see the data used to make international comparisons and would like data to be made available at a greater level of detail.

Key documents/links provided

Written Evidence for Assessment document

