

Prison Population Projections

Ministry of Justice

Prison Population Projections

July 2009

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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 UK Statistics Authority's overall objective is to promote and safeguard the production and publication of official statistics that serve the public good. The Statistics Authority 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

Contact us

Tel: 0845 604 1857

Email: authority.enquiries@statistics.gsi.gov.uk

Website: www.statisticsauthority.gov.uk

UK Statistics Authority
Statistics House
Myddelton Street
London EC1R 1UW

ASSESSMENT AND DESIGNATION

Under the provisions of the Statistics and Registration Service Act 2007, the UK Statistics Authority has a statutory function to assess sets of statistics against the Code of Practice for Official Statistics, with a view to determining whether it is appropriate for the statistics to be designated, or to retain their designation, as National Statistics.

Designation as National Statistics means that the statistics are deemed to be compliant with the Code of Practice. Whilst the Code is wide-ranging, designation may be broadly interpreted to mean that: the statistics meet identified user needs; are produced, managed and disseminated to high standards; and are well explained.

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

Designation as National Statistics will sometimes be granted in cases where some changes still need to be made to meet fully the requirements of the Code, on condition that steps are taken by the producer body, within a stated timeframe, to address the weaknesses. This is to avoid public confusion and does not reduce the obligation to comply with the Code.

Designation is granted on the basis of the information provided to the Statistics Authority, primarily by the organisation that produces the statistics. The information includes a range of factual evidence and also assurances by senior statisticians in the producer organisation. The views of users are also sought. Should further information come to light subsequently which changes the Authority's analysis, the Assessment report may be withdrawn and revised as necessary.

Once designated as National Statistics, it is a statutory requirement on the producer organisation to ensure that the set of statistics continues to be produced in compliance with the Code of Practice.

1. Introduction

- 1.1. This is one of a series of reports prepared under the provisions of Section 14 of the *Statistics and Registration Service Act 2007*¹. The report covers statistics of *Prison Population Projections*, a bulletin published annually² by the Ministry of Justice. The bulletin presents projections of the prison population in England and Wales for the period seven years ahead.
- 1.2. The Statistics Authority will be inviting comments on both the process for assessment and the presentation of the report with a view to further development of the arrangements in the coming months. The forward programme of Assessments is at <http://www.statisticsauthority.gov.uk/assessment/programme-of-assessment/index.html> and further information on the principles and procedures for assessment is at <http://www.statisticsauthority.gov.uk/assessment/principles---procedures/index.html>.
- 1.3. The remainder of this report is structured as follows:
 - Section 2 Summary of findings**, highlighting the main strengths and weaknesses in relation to the Code of Practice. This summary includes the UK Statistics Authority's recommendation in relation to designation as National Statistics.
 - Section 3 Subject of the assessment**, an overview of the statistics and their history.
 - Section 4 Detailed assessment**, providing more details about the assessment of compliance against each principle and protocol of the Code of Practice.
 - Annex 1 Suggestions for improvement**
 - Annex 2 Summary of the assessment process and users' views**
- 1.4. 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 http://www.opsi.gov.uk/Acts/acts2007/pgs/ukpga_20070018_en.pdf

² <http://www.justice.gov.uk/publications/prisonpopulation.htm>

2. Summary of findings

2.1. Recommendation for designation as National Statistics

- 2.1.1 The Statistics Authority confirms that the statistics published in *Prison Population Projections* are designated as National Statistics, subject to the implementation of the enhancements listed in section 2.4 below by November 2009.
- 2.1.2 Designation as National Statistics means that the statistics are deemed to be compliant with the Code of Practice, and thus that they meet identified user needs; are produced, managed and disseminated to high standards; and are well explained.
- 2.1.3 Designation also signifies that, subject to any caveats in this report, the Statistics Authority judges that the statistics are readily accessible, produced according to sound methods and managed impartially and objectively in the public interest.

2.2. Summary of strengths and weaknesses

- 2.2.1. The main user needs are met, and primary users are closely engaged in the production process. MoJ statisticians responsible for *Prison Population Projections* have told us that they are committed to engaging more proactively with external users through a forthcoming consultation.
- 2.2.2. The statistics are presented clearly and impartially. The annual report describes the assumptions on which the projections are based in an unbiased way, alongside guidance on the limitations of the projections. Further context would be helpful to enable readers to appreciate the relative impact of past legislative and policy interventions.
- 2.2.3. MoJ statisticians and operational researchers have developed their own projection models³. They have established strong ties with other equivalent international organisations and seek their advice as necessary. MoJ has created a database of projection models, so that the models can be re-used where suitable by analysts across the Department. They have also established guidelines for the development and quality assurance of projection models.

2.3. Detailed recommendations

- 2.3.1. The Assessment team identified some areas where it felt that MoJ could strengthen its compliance with the Code. Those which the Assessment team considers essential to enable re-designation as National Statistics are shown in section 2.4 below. Other suggestions, which would improve the statistics and the service provided to users but which are not central to their designation, are listed at annex 1.

³ These are a series of statistical calculations that use historical data, combined with assumptions about the future, to estimate the numbers of prisoners for a number of years ahead.

2.4. **Requirements for re-designation as National Statistics**

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|----------------------|---|
| Requirement 1 | Publish a revisions policy (para 4.8) |
| Requirement 2 | Publish quality guidelines (para 4.13) |
| Requirement 3 | Publish a Statement of Administrative Sources (para 4.35) |

3. Subject of the assessment

- 3.1. *Prison Population Projections* is a statistical bulletin produced by the Ministry of Justice (MoJ). The bulletin presents projections of the prison population and a description of the assumptions upon which the projections are based. It also reports recent trends in the prison population.
- 3.2. The term 'forecasting' describes the general statistical process of estimating in unknown situations, including what will happen in the future. The term 'projections' is used in the context of the prison projections for a particular type of forward-looking forecast, involving the forecasting of future populations under a set of stakeholder-defined scenarios based on assumptions about the future. In the case of the prison population projections, historic data are used to inform the decisions about assumptions of what may happen in the future, particularly how prison sentences may vary. MoJ has deliberately chosen to use the term 'projection' as it considers it to be the least likely to mislead users about the nature of the figures. Its main concern is to emphasise that the estimates of future prison population counts are related to the set of scenarios modelled. The projections are used to manage the demand for prison places; constraints (such as prison capacity) and policies (affecting custodial sentencing) are planned on the basis of the projections – and, as these act to change the prison population, the projections cannot be regarded as a simple prediction of the future.
- 3.3. The projections inform the development of prison policy, capacity planning, and support resource bidding and allocation within the Criminal Justice System and the National Offender Management Service. They inform the public and contribute to the debate about the use of custodial sentences and the consequences for the prison population.
- 3.4. Projections are generated for several scenarios determined by the judgement of experts – internal stakeholders – reflecting:
 - trends in sentencing and custody rates (the proportion of those sentenced at court who are given a custodial sentence);
 - average custodial sentence lengths;
 - the impact of legislation such as measures introduced through the *Criminal Justice and Immigration Act 2008*, and
 - policy initiatives (for example, *Simple, Speedy, Summary Justice*⁴).
- 3.5. MoJ's projections team varied the 2008-2015 projections according to three sentencing scenarios:

⁴ http://www.dca.gov.uk/publications/reports_reviews/delivery-simple-speedy.pdf

- high – assuming a 1% year on year rise in the custody rate and a rise of 0.5% in the average custodial sentence length (for determinate sentences);
 - medium – assuming no change in either the custody rate or average custodial sentence length;
 - low – assuming a fall of 1% in the custody rate and a fall of 0.5% in the average custodial sentence length.
- 3.6. The publication presents projections for seven years ahead. Short-term projections (for the first two years ahead) are modelled using monthly historic data, taking into account the current prison population, the amount of time served for different types of prisoners (for example, by age, sex, custody type), and the projected inflow and outflow from prisons each month. The longer term projections (the final five years) are modelled using the annual prison population, by sex, and sentenced and remand categories. This model estimates the number of first-time offenders and re-offenders that are sentenced each year. It uses historic custody rates and custodial sentence lengths, together with the sentencing trend assumptions for the future, to add the newly sentenced prisoners to the population count. Those that have come to the end of their sentence are subtracted.
- 3.7. The combined outputs from the long- and short-term models represent the baseline case, without accounting for the impact of changes in legislation or operational processes. The projections team use a model that estimates the indeterminate sentences which are given to dangerous offenders and those with severe personality disorders (produced by the Health Strategy Unit in MoJ). They also use the output from a model produced by the Office for Criminal Justice Reform to estimate the initiatives coming from the Criminal Justice System. These models were introduced in 2004.
- 3.8. The Government has produced long-term prison population projections since the 1970s and has published them in a statistical bulletin since 1984. MoJ took over the responsibility for the projections from the Home Office after its creation in May 2007. The current method for producing the long-term projections has been in place since 1998, while the short-term projections model was first used in 1999.
- 3.9. A National Statistics Quality Review of Prison Population Projections was conducted in 2002⁵. The Review found that the methodology for producing the projections was accurate. The key recommendations led to a number of changes in practice, including establishing the CJS stakeholder group for agreeing the assumptions, an assumptions database and a database of projections models.

⁵ <http://www.ons.gov.uk/about-statistics/methodology-and-quality/quality/nat-stats-qual-revs/qual-revs-by-theme/crime-and-justice/nsqr-series-report-no--10---review-of-forecasting-the-prison-and-probation-populations.pdf>

3.10. The method to produce the short-term projections was reviewed and improved in 2008. A project is underway to update the architecture of the long-term projections model and transfer it to new software during 2009.

4. Detailed Assessment

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.

- 4.1. MOJ's projections team has a good knowledge of, and contacts with, the primary users of the statistics presented in *Prison Population Projections*. The main internal users are policy colleagues within MoJ and HM Treasury, as well as organisations within the Criminal Justice System (CJS), such as the Parole Board, and units within the National Offender Management Service responsible for estate planning and sentencing policy. Some academics and lobby organisations with an interest in prison policy use the projections, though MoJ has said that it receives no enquiries related to the projections from outside the CJS.
- 4.2. Internal users are engaged mostly through a CJS stakeholder group. This group agrees the assumptions for the projections; members can also give their views on the format, timing and quality of the data during the consultation. The group usually meets twice a year to agree the assumptions, although more frequent discussions take place on related issues.
- 4.3. Engagement with external users is largely focused on the publication of technical papers in academic journals. MoJ statisticians have told us that they are currently planning a consultation with expert users on changes to the projection methods. MoJ intends to use this exercise to help identify whether there are 'silent' users, through contacts with CJS user groups.
- 4.4. MoJ statisticians have told us that they are currently working to extend their engagement with users. We suggest that views are sought on the format and timing of reports, as well as on the quality of the projections.
- 4.5. MoJ produces the *Prison Population Projections* once a year. The projections team said that they have produced the figures more often in response to particular prison planning needs, for example, in 2005. In that case, the assumptions were left unchanged but the projections were re-based on more up to date prison population data.

Principle 2: Impartiality and objectivity

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

- 4.6. Statistics are published in an orderly and timely manner via the MoJ website and the National Statistics Publication Hub and are free-of-charge. Errors are corrected and highlighted online with errata notes in the printed publications.
- 4.7. MoJ present the projections, and the assumptions on which they are based, in an impartial way. It makes factual reference to relevant legislation and the policy interventions that are expected to impact upon the figures, and that are incorporated into the projection models.
- 4.8. MoJ is currently developing a revisions policy. As part of the re-designation of the *Prison Population Projections* as National Statistics, this policy should be published⁶ (Requirement 1).

⁶ In relation to Principle 2 Practice 6 of the Code of Practice

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.

- 4.9. While prison population projections, and policy and operational decisions, are inextricably linked, there appears to be sufficient independence of statistical production and presentation. MoJ's assumptions on sentencing policy are developed according to an agreed process with wide stakeholder input. MoJ issues the statistical release, *Prison Population Projections*, separately from statements on prison capacity or sentencing policies.
- 4.10. Ministers are informed in advance of scheduled dates for statistical publications but we are assured that this is on a purely 'for information' basis, and decisions on the timing of releases are taken solely by the statistical Head of Profession.

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.

- 4.11. MOJ's projections team develops its own projection models. It seeks the advice of other equivalent international organisations on technical matters as necessary and has established contacts with their projection teams. MoJ publishes its methodology in academic journals and presents papers at technical conferences.
- 4.12. Overall, the statistics meet the quality requirements of the main users. Internal users are consulted about improvements to methods. The compilation of the projections is in line with MoJ guidelines on model development and quality assurance. A number of checks are made, for example checking the consistency between different models, between inputs and outputs, and that models can reproduce historical values. The publication contains some explanation of why particular choices were made, as well as a description of the limitations of the projections. The report also evaluates the quality of past projections compared with actual counts.
- 4.13. While MOJ does not have a formal quality management training programme, staff do receive on the job training and guidance from experienced colleagues. MoJ is developing a department-wide quality policy. Quality guidelines should be published as part of the re-designation of the *Prison Population Projections* as National Statistics⁷ (Requirement 2).

⁷ In relation to Principle 4 Practice 4 of the Code of Practice

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.

- 4.14. The base data used in the projection models are from two sources: the courts proceedings database and the prison case management system. The courts proceedings data are derived from sentences for individuals but contain no confidential information. The prison case management data do contain names but the extract is anonymised for use in the projection processing. The MoJ projections team has told us that it does not share the underlying data with other parties. The published data are not confidential.
- 4.15. We have been told by MoJ that the processing and storage of data used for the preparation of the projections are covered by the MoJ asset register. As part of these steps, an external expert has assessed the arrangements as complying with internationally recognised standards for information security management⁸. We suggest that MoJ publishes details of the steps taken to protect confidential information.

⁸ BS ISO/IEC 27000 series

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.

- 4.16. The suppliers who responded to our consultation said that the data they supply form part of their usual outputs and are therefore relatively easy to provide. They also said that they have good links with the projections team.
- 4.17. The MoJ Operational Research professional group has produced guidelines on the development of projection models and the quality assurance process. This group has also created a database of models, so that existing models can be re-used where suitable by analysts across the Department.

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.

- 4.18. The staff directly involved in the production of the prison population projections are members of the Government Operational Research Service (GORS) and are recruited via a centralised process. The wider team includes members of the Government Statistical Service and the Government Social Research Service, as well as MoJ generalists. Appropriate competence frameworks are in place, as are mechanisms to support personal and professional development.
- 4.19. The production of the *Prison Population Projections* appears to be sufficiently resourced at the current time. Due to the specialist nature of the work sometimes there has been a shortage of appropriately skilled staff. Lack of suitably qualified Operational Researchers led to the 2008 publication being delayed from its pre-announced date.
- 4.20. Appropriate project management tools are used to manage resources. No dedicated resource is allocated within the 2009/10 budget for user consultation on the long-term model development work.
- 4.21. Following a Cabinet Office Capability Review⁹, MoJ analytic functions have been brought into a single Directorate; previously they were spread across the Department. MoJ statisticians have told us that this change has enabled resources to be used more flexibly, and analytical work to be prioritised more effectively.

⁹ http://www.civilservice.gov.uk/Assets/Capability_Review_MOJ_tcm6-1067.pdf

Principle 8: Frankness and accessibility

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

- 4.22. The publication describes the limitations of the projections. Some context is provided on the projections, with a brief presentation of recent trends in the actual prison population size. We think that users would benefit from more explanation of the impact of changes in legislation and of policy interventions on the prison population counts, with links to background information. MoJ outlines the factors that are expected to affect the population count but we think it would be helpful to users if the impact was quantified. We suggest that MoJ consults with users to identify the demand for estimates of the impact on the projections of the effects of individual policies and practices.
- 4.23. MoJ provides a limited level of breakdown of the projections (by sex and whether the offender is on remand) due to concerns about data reliability, although some users are known to be interested in a greater level of detail (for example, age and region). MOJ statisticians have told us that more detailed projections would be unreliable.
- 4.24. We think it would be helpful to users for MoJ to compare the prison population projections with prison capacity. The projections team has told us that they are concerned that it might be misleading to compare the capacity with the projections over time, because MoJ may decide to increase prison capacity as a result of the information produced through the modelling of the prison population. However we suggest that it would be helpful to users to make clear the current prison capacity, as well as the actual prison population size, at the time of the publication.
- 4.25. MoJ does not publish statistical news releases to accompany the publication of its official statistics. However, it flags the releases on the home page of the MoJ website, as well as via the National Statistics Publication Hub (for the releases of National Statistics series). The latest publication is given as a PDF file on a webpage devoted to the particular product, together with a brief outline of the content.
- 4.26. Data about prison population projections are released online in Excel format, alongside the PDF version of the report. We suggest that MoJ makes greater use of the Publication Hub to provide explanatory material on the prison population projections in the "Prison" topic pages.

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.

- 4.27. Regular consultation takes place with internal stakeholders. Most users felt that they received good support from the producers in understanding their needs and priorities. Positive responses were received from users on the presentation of material in the bulletin.
- 4.28. MoJ has not sought the views of external users, for example, on the presentation of the statistics or their experience of using the statistical service. Technical papers are published in academic journals, but there is minimal engagement with external users. MoJ is addressing this through a consultation exercise intended to obtain feedback on changes to methodology. MoJ statisticians hope to identify previously unknown users and seek their views on the publication.

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.

- 4.29. The 2008 bulletin is available through the MoJ website and is accessible through the Publication Hub; the same arrangements are planned for the 2009 bulletin.
- 4.30. MoJ has told us that the projections are published as soon as practicable. MoJ reported that the publication is usually included in the Department's publication schedule and on the Publication Hub. The next publication of the bulletin was not included in either schedule at the time of the assessment because of uncertainty about when the next round of projections would be undertaken while the technical redevelopment was being planned. MoJ statisticians told us that they were shortly to announce the date.
- 4.31. MoJ has previously announced a publication delay, with messages on both the Publication Hub and the MoJ website (see para 4.19).
- 4.32. The name of the responsible statistician is given at the back of the bulletin.
- 4.33. The pre-release access list for the 2008 publication is not available online. We suggest that MoJ publishes the record of those who had access prior to the 18 September 2008 release of the *Prison Population Projections 2008-2015*.
- 4.34. No inappropriate policy statements have been found to be made alongside the release of the statistics.

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.

- 4.35. The prison population projections are derived from a series of models which use data from administrative sources. As part of the re-designation of the *Prison Population Projections* MoJ should publish a Statement of Administrative Sources¹⁰ (Requirement 3).
- 4.36. There is evidence of Departmental practices which seek to minimise burden (such as maintaining the database of models).

¹⁰ In relation to Protocol 3 Practice 5 of the Code of Practice

Annex 1: Suggestions for improvement

A1.1 This annex includes some suggestions for improvement to the Ministry of Justice's *Prison Population Projections*, in the interest of the public good. These are not formally required for re-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 | Seek the views of users on the format and timing of reports, as well as on the quality of the projections (para 4.4) |
| Suggestion 2 | Publish details of the steps taken to protect confidential information (para 4.15) |
| Suggestion 3 | Provide greater explanation of the impact of legislation and policy interventions on the prison population counts, with links to background information (para 4.22) |
| Suggestion 4 | Consult users to identify the demand for estimates of the impact on the projections of the effects of individual policies and practices (para 4.22) |
| Suggestion 5 | Make clear the current prison capacity, as well as the actual prison population size, at the time of the publication, within the bulletin (para 4.24) |
| Suggestion 6 | Make greater use of the National Statistics Publication Hub to provide explanatory material on the prison population projections in the "Prison" topic pages (para 4.26) |
| Suggestion 7 | Publish a list of people given pre-release access to the 2008-2015 projections (para 4.33) |

Annex 2: Summary of assessment process and users' views

A2.1 This assessment was conducted from April to July 2009.

A2.2 The Assessment team met representatives of the Ministry of Justice at an initial meeting in April 2009. Some background information was provided by the Ministry of Justice in May 2009, and Written Evidence for Assessment was provided on 29 May 2009. The Assessment team subsequently met with the Ministry of Justice during June 2009 to confirm and clarify the written evidence provided.

Summary of users contacted, and issues raised

A2.3 As part of the assessment, questionnaires were sent to 24 users and other interested parties. The Assessment team received 9 responses. The respondents were grouped as follows:

Internal (central government) users	5
External users	2
Suppliers	2

A2.4 Users were satisfied with the presentation of the statistics, accessibility and ease of finding the required information. There was interest in receiving a finer level of breakdown and more frequent projections (perhaps six monthly). Most users felt that they had good relationships with the producers and that their needs were well understood. However, there were more mixed views on the quality of the data, and on the effectiveness of user consultation.

Key documents/links provided

Written Evidence for Assessment document

<http://www.justice.gov.uk/publications/prisonpopulation.htm>

