PRISONS AND PROBATION OMBUDSMAN
for England and Wales
Independent Investigations

Learning from PPO investigations: Natural cause deaths in prison custody 2007-2010

March 2012

Prisons and Probation Ombudsman
Ashley House, 2 Monck Street, London SW1P 2BQ

Foreword

This is the second thematic report published since I took up post in September 2011. I am keen to increase the learning of lessons from our investigations, not least those into deaths in custody. Thematic reports are an important means of delivering this ambition.

This short report, by David Ryan Mills, explores some of the issues arising from our investigations into deaths that occur in custody from natural causes. The numbers of these deaths has increased markedly in recent years, an increase that may continue given the ageing nature of the prison population. Indeed, people over 60 are now the fastest growing age group in the prison estate, largely a result of increasing sentence lengths and retrospective convictions. However, deaths from natural causes in custody do not merely reflect age but also the range of serious or long-standing physical disorders that are often found amongst the custodial population.

Looking across our individual investigations offers the opportunity to draw some broad conclusions and suggest areas for further exploration. For example, a key question that is asked of our clinical reviewers is whether the care received by those dying in custody of natural causes was equivalent to what they could have expected to receive in the community. Interestingly, the report provides some evidence that prisons are beginning to adjust positively to the changing nature of the population: equity of care was generally found to improve with both age and length of time spent in custody. However, the report also points to weaknesses and areas for improvement, not least the quality of prisons' emergency responses to those in serious clinical need.

These are only exploratory findings and need to be built upon as part of our lessons learned strategy for 2012-15, but they usefully add to our understanding of the troubling rise in the number of prisoners who die of natural causes in custody, as well as illustrating the growing challenges facing those who care for them.

Nigel Newcomen CBE
Prisons and Probation Ombudsman

Executive Summary

- This report presents analysis of data collected from 402 PPO investigations into deaths in custody from natural causes conducted between 1 January 2007 and 31 December 2010.

- The purpose of this paper is twofold. Firstly, the paper aims to provide stakeholders and services in remit with a bigger picture of natural cause deaths in custody than that given by each individual investigation report. Secondly, the evidence provided in the paper will be used to inform the PPO's learning agenda for the 2012-2013 reporting year.

- One aim of a PPO investigation is to establish whether the care provided to the deceased was equitable with what could have been expected in the community. Statistically significant relationships were found whereby the equity of care provided improved with both age and length of time spent in custody.

- Those whose deaths were reasonably foreseeable (due to either a terminal diagnosis or a range of other factors) were also more likely to have received equitable care.

- In common with previous PPO learning publications, emergency response is identified as an area with a number of learning opportunities. In cases where the individuals' clinical condition merited an emergency response, investigation identified room for improvement in 34% of cases.

- Prisoners serving indeterminate sentences, and those in the custody of the High Security Estate, were over-represented.

- The most common causes of death were diseases of the circulatory system (43%), followed by cancer (32%). These are also the leading causes of death in the community.

- As a result of the quantitative evidence presented in this paper, the PPOs learning agenda for 2012-13 will focus on groups where inequitable care was identified most often. This will involve the sharing of lessons learnt from the natural cause deaths of younger prisoners and those relatively new to custody. Learning publications will be directed towards service providers.

- Additional work on the potential impact of an ageing prison population on prisons, their healthcare providers and the PPO would also be of benefit.

1. Caseload Overview

1.1 Gender

The vast majority of deaths investigated were of male prisoners (97.5%). This is broadly representative of the wider population in custody between 2007 and 2010, 95% of whom were men[1].

1.2 Age at death

The mean age at the time of death of the prisoners in the sample was 56 years old, with the youngest aged 19 and the oldest 88 years old. Figure 1 details the number and proportion of deaths in each age group:

Figure 1: Natural cause deaths - NHS age groups (N=402)

Age group	*Natural cause deaths*	*Percent*
15-24 years	7	2%
25-34 years	19	5%
35-44 years	63	16%
45-54 years	92	23%
55-64 years	93	23%
65-74 years	97	24%
75-84 years	28	7%
85 years and over	3	1%
Totals	402	100%

The most represented age group were between 65 and 74 years (24%), with those aged 45 to 54 years (23%) and 55 to 64 years (23%) represented on a similar scale. A large number of the deaths in the sample are of those prisoners aged between 35 and 54 years (155, 39% of all deaths). Whilst these prisoners may be described as 'middle-aged' by community standards, they are considered to be 'older prisoners' by medical practitioners once over the age of 50[2]. This reflects how people may age more quickly while in prison; by up to 10 years more than their biological age according to some commentators[3].

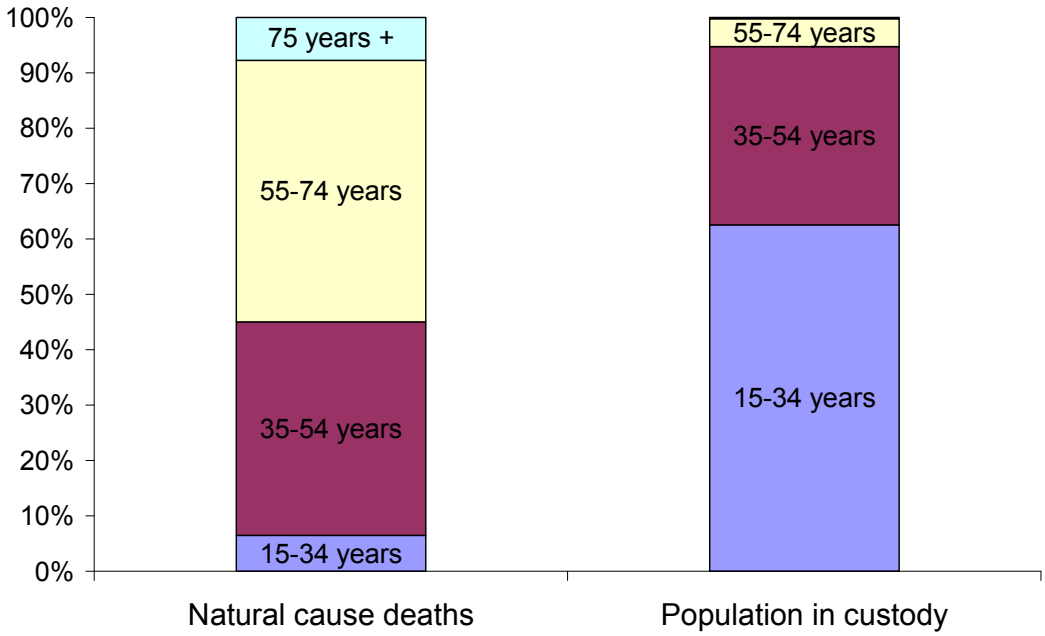
[1] The demographics of the sample of prisoners were compared to the prison population using data available from the Ministry of Justice: http://www.justice.gov.uk/publications/statistics-and-data/prisons-and-probation/oms-quarterly-editions.htm. Cited figures use an average over the period 2007-2010.

[2] Department of Health / Nacro (2009) *A resource pack for working with older prisoners.* Crown.

[3] Wahidin, A. & Cain, M (Eds.) (2006) *Ageing, crime and society*. Willan Publishing: Devon.

In the wider community, deaths are largely distributed towards the older end of the age scale. However, the age and gender profile of the population in custody, which remains largely dominated by young men, makes such a crude comparison unhelpful. Figure 2 demonstrates this by comparing the age at death of the prisoners in the sample with the age of the prison population as a whole:

Figure 2: Age at death (N=402) and population in custody (N=83,000)



In order to determine whether there are more deaths in the prison population than would be expected, standardised mortality ratios (SMRs) should be used. These ratios control for the age and gender of the prison population when compared to the wider community. SMRs for the population in custody have previously been calculated in a discussion paper published by the Ministry of Justice in 2011. These calculations revealed some evidence of excess mortality in the prison population when deaths from all causes (including natural, self-inflicted, and other non-natural deaths) were observed[4].

1.3 Older prisoners

The number of prisoners aged 50 years or older remains relatively small, though the number and proportion of such prisoners in custody has increased since the PPO began investigating deaths in custody. In 2004, there were just over 5,000 such prisoners which accounted for 7% of the total prison population. By June 2011, this had increased to nearly 9,000 prisoners, accounting for 10.5% of the total prison population.

[4] Ministry of Justice (2011): *Discussion of measurement of trends in deaths in custody – standardised mortality rates methodology: Ministry of Justice Technical Note* 28 July 2011

This increase in the number and proportion of prisoners over the age of 50 did not have a significant effect on the age at death of the prisoners in the sample. Further analysis of the age at death of a larger sample of prisoners over a greater period of time would be beneficial.

1.4 Ethnicity and nationality

The majority of the prisoners were white, 88% of all deaths investigated, compared with 73% of the total prison population. More specifically, 80% of the prisoners were white-British.

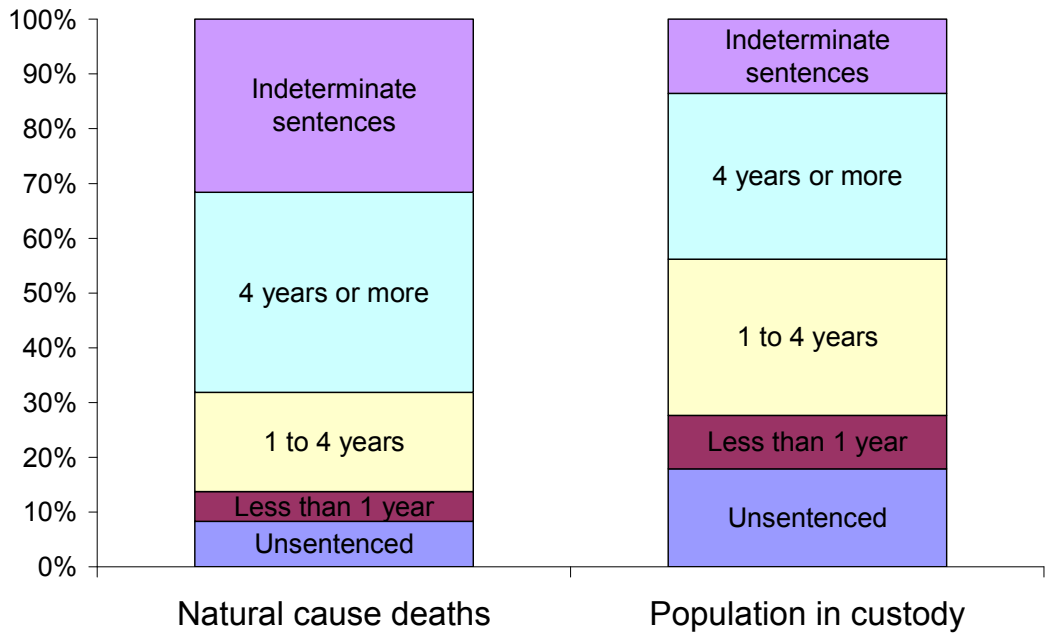
Foreign national prisoners (FNPs) accounted for 11% of the deaths investigated, compared to 15% of the total prison population.

Both FNPs and Black and Minority Ethnic prisoners are slightly younger on average than white and British prisoners. This may explain in part why these groups are under-represented in the sample.

1.5 Sentencing

The majority of natural cause deaths were of prisoners serving lengthy sentences; 37% on determinate sentences of four years or more and 32% serving indeterminate sentences. Figure 3 compares the sentence type of the sample of prisoners with that of the total prison population:

Figure 3: Sentence type (Natural cause deaths and population in custody) (N=396[5])



[5] Sentencing information was not available in six of the 402 cases in the sample.

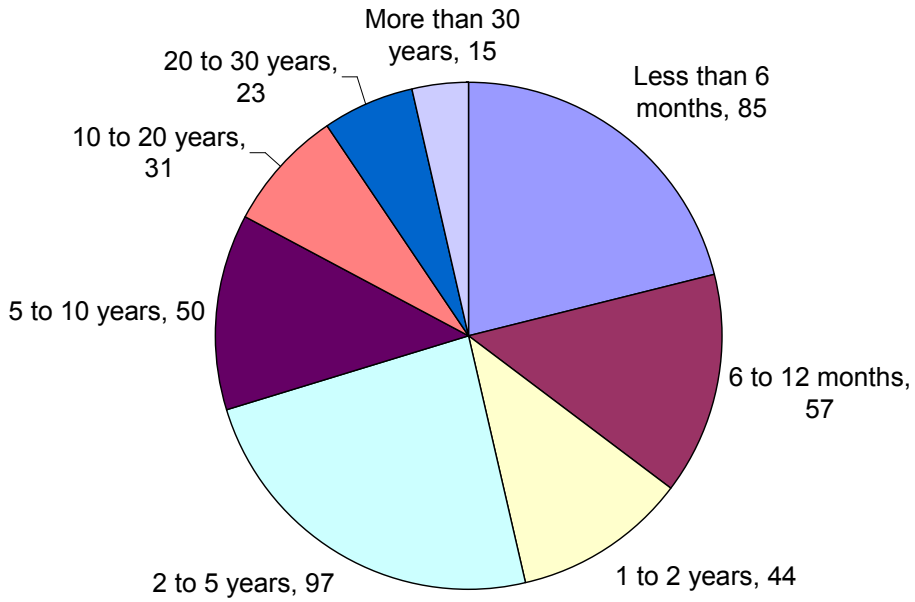
Deaths of those prisoners sentenced to lengthy and indeterminate spells in custody are over-represented in the PPO caseload.

It was described earlier how the number and proportion of older prisoners in custody has increased since the PPO assumed responsibility for the investigation of deaths in custody. The number and proportion of prisoners serving indeterminate sentences has also increased over the same period. In 2004, there were fewer than 6,000 prisoners serving indeterminate sentences accounting for 7.5% of the total prison population. By 2010, the number had more than doubled to over 13,000 and the proportion had risen to just over 15%.

1.6 Latency

The length of time the deceased had spent in custody varied across the deaths investigated. Figure 4 plots the length of time spent in custody across the sample:

Figure 4: Time spent in custody (N=402)



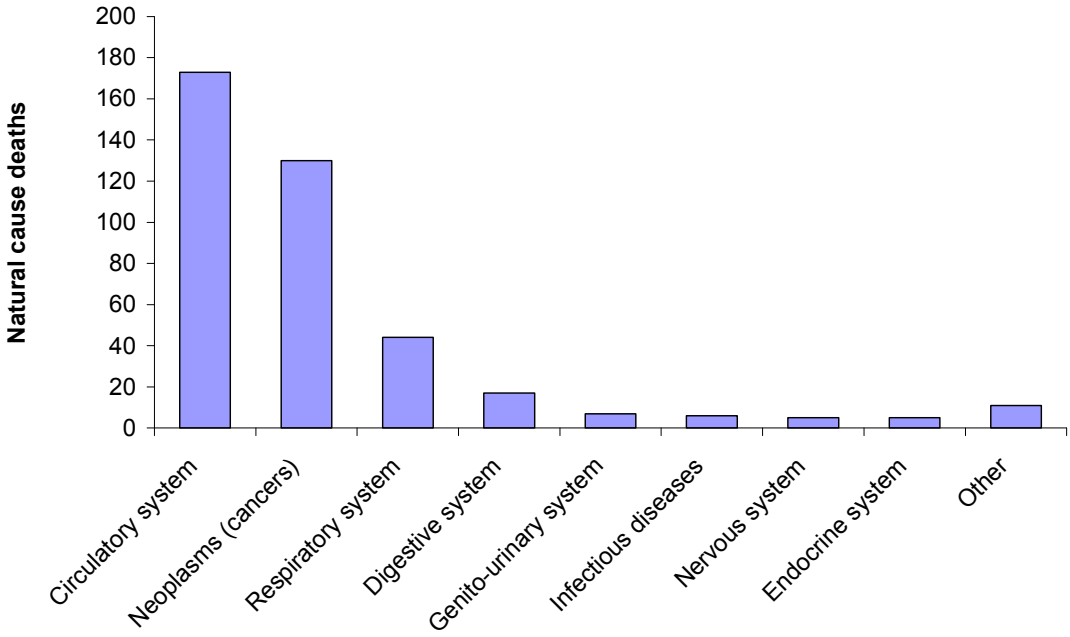
Given how older prisoners and those sentenced to long or indeterminate sentences are over-represented in PPO investigations, Figure 4 challenges the assumption that those who die in custody from natural causes will have been in prison for a very long time. Less than a third of the prisoners in the sample had been in custody for more than five years (30%) whilst almost half had been in custody for less than two years (47%).

There is a complex relationship between sentencing patterns, the age of the prison population and deaths in custody. It warrants further research and modelling on its potential impact on prisons and their healthcare providers in the next decade.

1.5 Cause of death

The PPO classifies deaths according to the International Classification of Diseases (ICD 10). The 402 deaths in the sample are classified in Figure 5:

Figure 5: Natural cause deaths: ICD 10 Classification (N=398[6])



The leading causes of death are diseases of the circulatory system (including coronary artery disease and strokes: 43% of all deaths in the sample) followed by neoplasms (cancers: 32% of all deaths in the sample). They are also the two leading causes of death in the community[7].

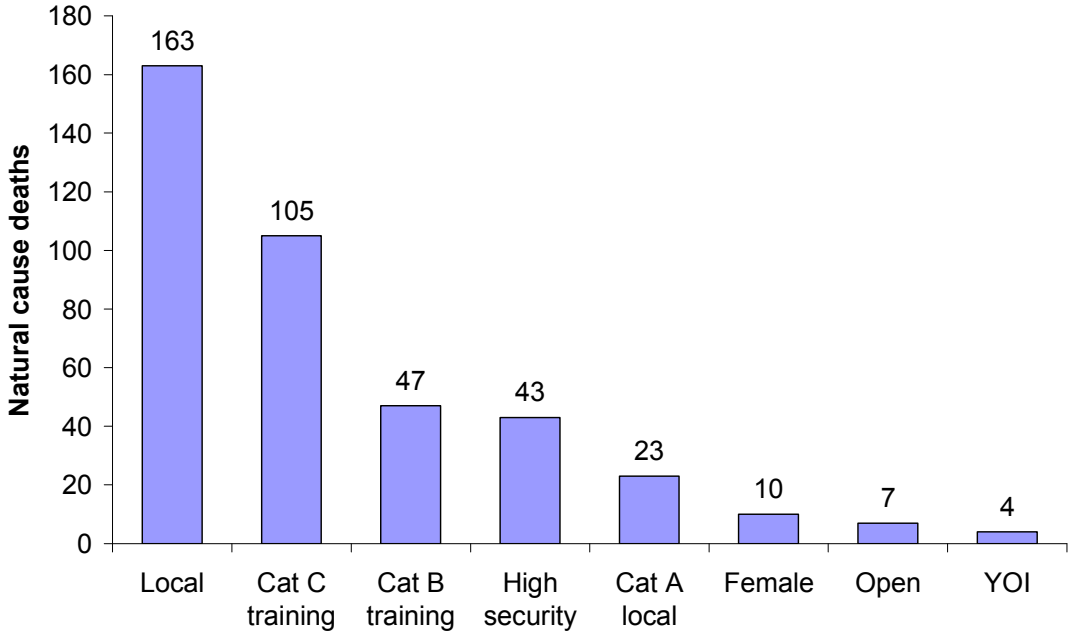
[6] The exact cause of death had not been established in four of the 402 cases in the sample.

[7] ONS Statistical Bulletin (13 July 2011) *Births and Deaths in England and Wales, 2010.* Available at http://www.ons.gov.uk/ons/rel/vsob1/death-reg-sum-tables/2010/index.html

1.6 Establishments

The greatest proportion of deaths occur amongst those in the custody of local prisons:

Figure 6: Natural cause deaths - establishment type (N=402)

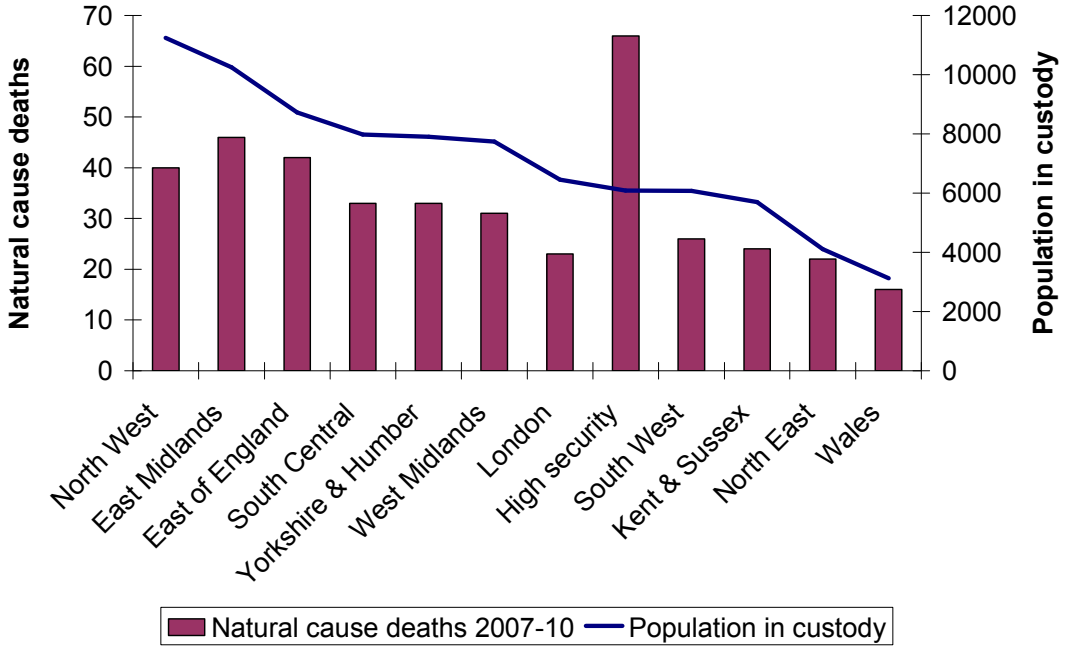


Whilst it is fair to assume that the natural cause deaths that occur amongst prisoners far along their sentences should occur outside of local prisons, it should be noted that many prisoners in the sample were transferred into local prisons with large healthcare wings and better access to outside hospitals.

1.7 Geography

There are eleven NOMS prison regions that are structured geographically, and a twelfth, the High Security Estate (HSE), which is subject to centralised management by NOMS. The deaths investigated occurred across these regional structures:

Figure 7: NOMS region: Natural cause deaths and population in custody (N=402)



The distribution of the deaths in the sample fits broadly with the resident population in each region, with the notable exception of the HSE. The HSE accommodates 7% of the population in custody, though 16% of the deaths investigated were of prisoners in the custody of these prisons.

There are a number of reasons why deaths of those in the custody of the HSE were over-represented between 2007 and 2010. Prisoners in the HSE are more likely to be serving a lengthier sentence, more likely to be older and more likely to have been in custody for a longer period of time.

There are also geographical and environmental factors to consider. Some prisons in the HSE have large healthcare centres and developed links with nearby hospitals and specialists. As a result, prisoners who may not otherwise be in the HSE may be kept in such prisons for health reasons.

11% of the deaths were of prisoners in the custody of privately contracted prisons. This is representative of proportion of the population held in these establishments.

1.8 Location of death

Just over half of the deaths (or collapse leading to death) in the sample occurred within prison, 46% in cells and 7.5% in communal areas such as gyms or association areas.

The deaths that occurred outside of prison were either in an NHS hospital (39.5%) or hospice (7%).

Of the deaths in cells, 65% were cells on normal location whilst 29% were in healthcare centres. The remaining 6% were in other specialised areas such as the induction wing or care and separation units.

2. Care Provided

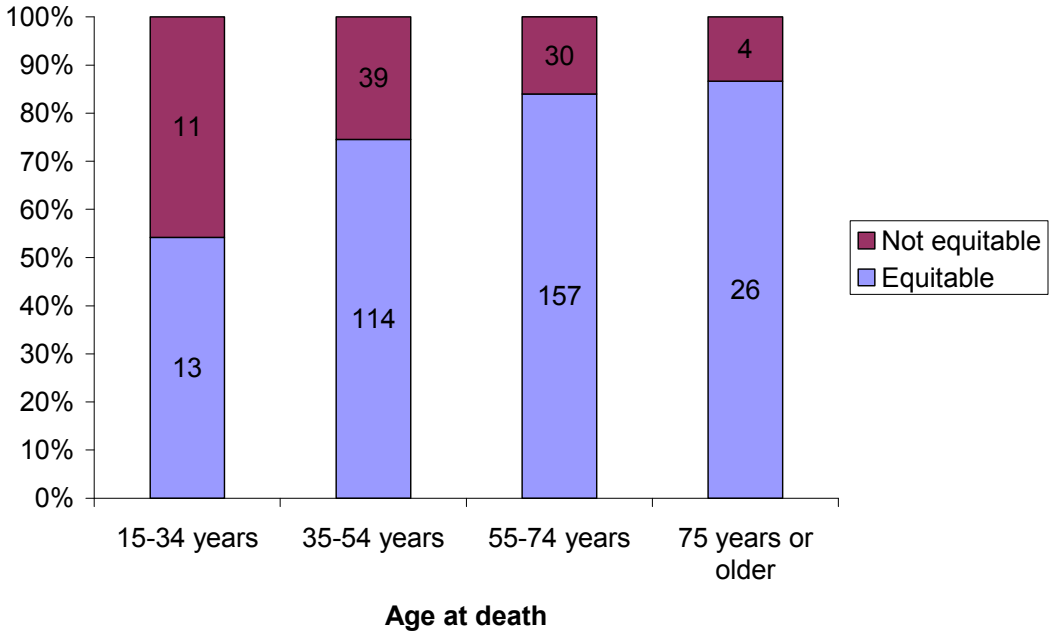
One aim of a PPO investigation is to establish whether the clinical care provided to the deceased was equitable with what they could have expected had they been in the community[8]. Using standard statistical methods[9] on the data collected, analysis was undertaken to see whether there was a relationship between the equity of care provided to the deceased and a range of individual factors.

This analysis found that gender, ethnicity and nationality shared no statistically significant relationship with the equity of care provided. Cause of death, location of death, type of establishment (e.g. local, high security) or NOMS region also shared no significant relationship with equity of care. However, statistically significant relationships were found when the age of the deceased, the length of time the deceased had been in custody, and whether or not death could be described as reasonably foreseeable were considered. These three themes are now explored further.

2.1 Age and clinical care

Figure 8 demonstrates a clear relationship between the age at the time of death of the prisoners in the sample and the equity of care provided:

Figure 8: Age at time of death and equity of care provided (N=394[10])



[8] Further information on PPO investigation methodology, including assessment of clinical matters, is available in Annex 1.
[9] Where statistical significance is inferred, the chi-square test against the null hypothesis has been used. For further information, see Appendix 2.
[10] In eight of the 402 deaths in the sample, circumstances meant that an assessment of the equity of care provided was inappropriate.

The chart shows how, on the basis of the data collected, equity of care improves with age. Care was particularly inequitable for the youngest age group, with only just over half receiving care equivalent to that which they could have expected in the community.

Focusing on the deaths of those aged less than 45 years, the cause of death was heart related in 55% of cases compared to 43% in the total sample:

Figure 9 - Deaths of those aged less than 45 years - Cause of death (N=88)

Cause of death	*Prisoners aged under 45 years*	*% All prisoners aged under 45 years*
Circulatory system	48	55%
Neoplasms	13	15%
Respiratory system	4	5%
Digestive system	4	5%
Nervous system	4	5%
Infectious diseases	4	5%
Not ascertained	4	5%
Genito-urinary system	3	3%
Endocrine system	1	1%
Other	3	3%
Totals	88	100%[11]

In addition, deaths (or collapse leading to death) were more likely to be in cells in the under 45 year age group (66% compared with 46% of all deaths analysed). The combination of these factors is a timely reminder of the thematic report on deaths from circulatory diseases produced by the PPO in 2010[12].

Investigations of deaths of prisoners under the age of 45 years found that a proper and timely investigation of symptoms did not happen in 40% of cases. Particular concerns were expressed around the following three themes:

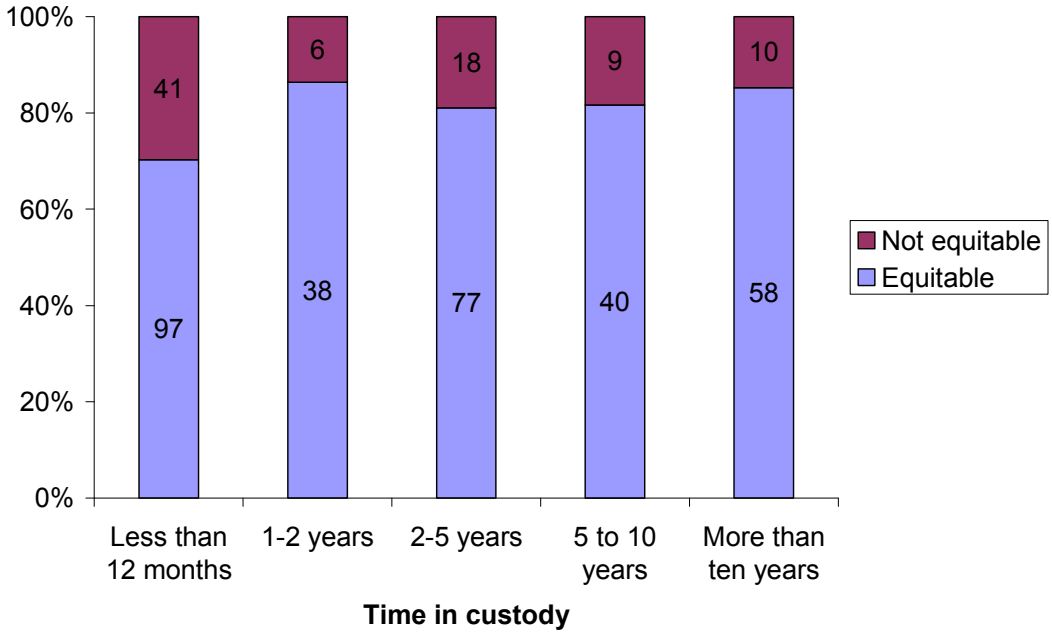
- Delays in referrals to healthcare staff, prison doctors and outside specialists
- Delays in responding to rapid deterioration in health and summoning emergency services
- Poor monitoring of chronic conditions (including asthma, diabetes & epilepsy)

[11] Percentages are rounded and therefore may not add up to 100%
[12] Ryan Mills, D. (2010) *Learning from PPO investigations: Deaths from circulatory diseases* available at http://www.ppo.gov.uk/docs/deaths-from-circulatory-diseases.pdf

2.2 Time in custody and clinical care

Figure 10 demonstrates the relationship between time in custody and equity of clinical care:

Figure 10: Time in custody and equity of care provided (N=394)



There is a statistically significant relationship whereby the care was more equitable for those who had spent longer in custody. This can be explained in part by the greater opportunity to provide planned and holistic care when a prisoner is settled in custody. Indeed, a large proportion of those prisoners who had been in custody for ten years or more had care plans set up for their physical health conditions (71%). This was the case for only 58% of those who had been in custody for less than 12 months.

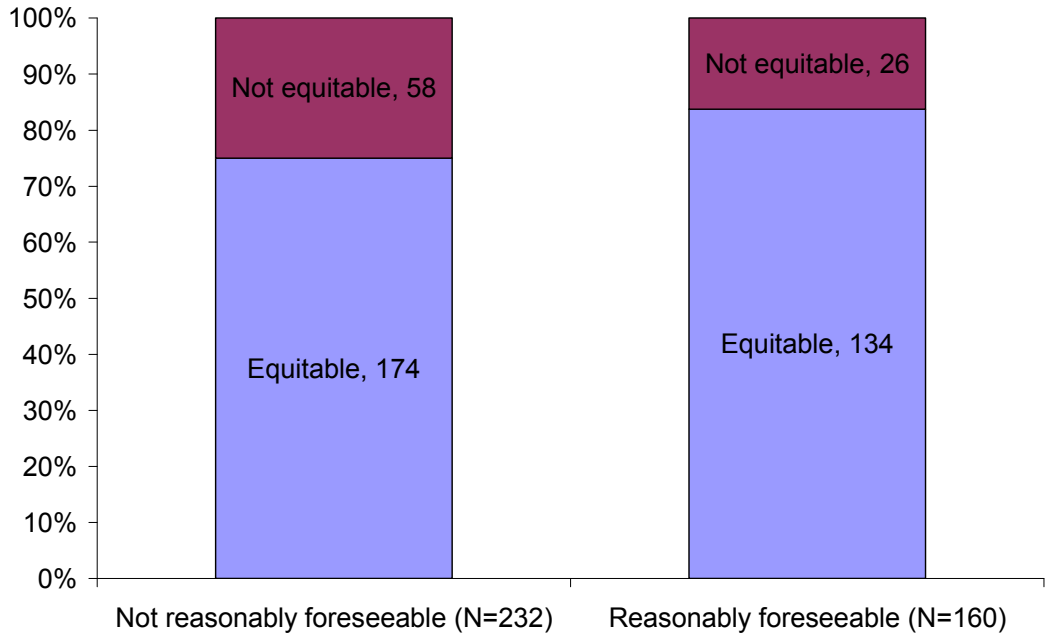
Focusing in particular on those who had been in custody for less than 12 months (138 prisoners), investigations found occasions where a proper and timely investigation of symptoms did not happen in 36% of cases. Particular concerns were expressed around the following themes:

- Poor assessment and investigation of symptoms of ill-health
- Poor monitoring of chronic conditions
- A lack of contact with healthcare staff

3. Reasonably Foreseeable Deaths, Terminal Illness and Palliative Care

Over a third of natural cause deaths investigated were described by PPO investigators as reasonably foreseeable (41%), due to either a terminal diagnosis or other factors such as multiple chronic conditions and old age. Analysis has found that the equity of care provided was better when death was reasonably foreseeable than when it was not:

Figure 11: Foreseeable deaths and equity of care



The quality of care provided to dying prisoners was commented upon in the PPO's 2011/12 annual report. Most prisons now have access to specialist clinical services to provide advice and support to healthcare staff. The hospice movement, together with Macmillan nurses and the NHS, now work in prison healthcare units across England and Wales. These palliative care services are often from the voluntary sector and their provision of specialist care is notable given their limited resources.

The PPO does not routinely investigate the deaths of prisoners released from custody on compassionate grounds, though deaths of those released on temporary licence (ROTL) for medical reasons are. There were 113 prisoners in the sample who had a terminal illness and a full palliative care plan in place at the time of death, accounting for 28% of all deaths in the sample. Twenty-two of these prisoners were on ROTL at the time of death, accounting for 19% of those with palliative care plans and 5% of all prisoners in the sample.

4. Emergency Response

It was noted earlier how 46% of the deaths in the sample (or collapse leading to death) occurred in cells (184 cases). In 117 of these cases (or 29% of all deaths in the sample) the individuals' clinical condition merited an emergency response[13].

In the 117 deaths where an emergency response was required, investigation identified learning in 40 cases (34%). Figure 12 details the most common areas where learning and improvement was highlighted:

Figure 12: Emergency response learning (N=40, multiple response)

Nature of concern	*Number of cases*
Lack of access to emergency equipment	14
Delays in paramedics reaching the scene	10
Delays in healthcare staff reaching the scene	10
Delays in calling an ambulance	9
Delays in entering cells	8
Absence of emergency first aid trained staff at scene	8
Ineffective radio use	7
Totals	**66**

The areas of concern detailed in figure 12 are discussed in greater depth in the 2010 report on deaths from circulatory diseases[14].

5. Fatal Incidents Research - the next steps

The analysis presented in this summary report has highlighted areas for further learning lessons research. Analysis has shown that the deaths of younger and middle aged prisoners generate the most learning in terms of equity and quality of care, and attention will be focused here. Similarly, the deaths of prisoners who have been in prison for a relatively short period of time warrants further exploration and sharing of lessons learnt, with healthcare staff contact and chronic disease management appearing to be pertinent themes.

The paper has also provided a timely reminder of issues around emergency response discussed in previous learning publications. Finally, the report demonstrates the need for a thorough exploration into the potential effects of the ageing prison population on prisons, their healthcare providers and, indeed, the PPO.

[13] Deaths in healthcare cells and adapted palliative care cells are not considered in this analysis of emergency response.
[14] Ryan Mills, D. (2010) *Learning from PPO investigations: Deaths from circulatory diseases* available at http://www.ppo.gov.uk/docs/deaths-from-circulatory-diseases.pdf

Appendix 1: Fatal Incident Investigations

The PPO's fatal incidents team investigate deaths of prisoners, residents of probation approved premises, those held in immigration removal centres and those subject to managed escort. At the Ombudsman's discretion, investigations have also been carried out into deaths of those who have been released from custody or detention, whether temporarily or permanently, where the case raises issues about the care provided. Investigations have also been undertaken into deaths of those in custody in the Channel Islands at the invitation of the authorities there. Investigation reports are issued to the bereaved families, to HM Coroners, to the services in remit, and to the relevant Primary Care Trust (PCT) or, in the case of deaths in Wales, Healthcare Inspectorate Wales.

Upon notification of a death in remit, an investigator will lead the investigation and a family liaison officer will liaise with the bereaved family. The investigator will find out as much as possible about the circumstances surrounding the person's death. This involves examining all the relevant documents and policies, together with interviews with relevant staff and prisoners or residents, if required. A clinical review is commissioned from the local PCT or, in the case of deaths in Wales, Healthcare Inspectorate Wales. In turn, they appoint a clinical reviewer (or reviewers) to assess the healthcare provided to the deceased and provide a report for evidence in the investigation. Once the PPO investigation is complete, a report is produced. The report outlines the investigation findings, including any clinical matters, and may also recommend changes to improve the quality of care given by the prison, approved premises or immigration removal centre in the future. Reports are issued in draft, giving the bereaved families and service provider an opportunity to comment on findings before the final report is issued.

Following inquest, the reports are anonymised and published on the PPO website[15]. Table 1 provides a summary of all investigations opened between April 2004 (the Fatal Incidents Team's inception) and March 2011:

Table 1: Fatal incident investigations 01/04/2004 - 31/03/2011

PPO Classification	*Prison*	*Approved Premises*	*Discretionary*	*Immigration*	*Training Centre*	***Totals***
Natural Causes	691	39	3	2	0	**735**
Self-Inflicted	487	24	5	4	1	**521**
Homicide	12	1	0	0	0	**13**
IDrug Overdose	24	25	3	0	0	**52**
Accident	2	3	1	0	0	**6**
Unclassified[16]	23	3	2	1	0	**29**
Totals	**1,239**	**95**	**14**	**7**	**1**	**1,356**

[15] http://www.ppo.gov.uk/

[16] Unclassified deaths include deaths not easily categorised as self-inflicted, natural causes, illicit drug overdose, accident or homicide.

Appendix 2: Methodology and Sample

Methodology

Since June 2009, PPO investigators have completed a pro forma for each finalised investigation, providing the source data for the Fatal Incident Investigation Full Information System (FIIFIS). Pro formas for investigations published prior to June 2009 were completed by the research team. The pro forma captures quantitative information on the many issues that arise in a fatal incident investigation, from the offence and sentence history of the deceased through to emergency response and family liaison. The data captured is hosted on a Statistical Package for the Social Sciences (SPSS) dataset. This enables quantitative data analysis to be performed without exporting to another software package. Where statistical significance is inferred, the chi-square test of the null-hypothesis has been used to 95% significance level.

Sample

This paper presents analysis of the available data from all PPO investigations into deaths due to natural causes in prison custody between 1 January 2007 and 31 December 2010. The PPO opened investigation into 413 deaths of prisoners due to natural causes during this period. At the time of writing, 14 of these investigations were ongoing, and as such were not at the appropriate stage for data to be collected. This paper therefore presents analysis from the findings of 402 PPO investigation reports:

Table 2: Sample overview

	2007	*2008*	*2009*	*2010*	***Total***
PPO investigations into deaths of prisoners from natural causes	86	98	102	127[17]	**413**[18]
PPO investigations available for analysis	85	98	100	119	**402**

[17] Due to a small number of deaths in 2010 still awaiting classification, this figure remains provisional.

[18] Due to differences in how deaths are classified, PPO figures for deaths in custody differ slightly from those published by the Ministry of Justice. NOMS official statistics are available at Ministry of Justice (2010): *Safety in custody statistics 2008/2009: Ministry of Justice Statistics Bulletin* 11 February 2010. Both NOMS and PPO classifications are subject to change following inquest or as new information emerges.

PPO Research and Analysis:

The PPO aims to be a leading, independent investigatory body, a model to others, that makes a significant contribution to safer, fairer custody and offender supervision. Research and analysis helps us achieve this vision.

All the reports below can be found on the PPO website
http://www.ppo.gov.uk/otherreports-and-publications.html

Fatal incidents research

Learning from PPO investigations: Violence reduction, bullying and safety (October 2011)

Learning from PPO investigations: Self-inflicted deaths in prison custody 2007-2009 (June 2011)

Learning from PPO investigations: Deaths from circulatory diseases (November 2010)

Review of Fatal Incident Reports September 2008 to August 2009 (March 2010)

Complaints research

Learning from PPO Investigations: Overview of complaints (May 2011)

PPO Complainants' Feedback 2009 (Feb 2010)

Report on effectiveness of PPO Publicity Materials (Dec 2008)

Stakeholder feedback

Perceptions of PPO 2009-2010 (June 2010)

PPO Bereaved families report 2009 (Feb 2010)

PPO Stakeholder Feedback 2009 (Feb 2010)

PPO Stakeholder Feedback 2008 (Feb 2009)