
New South Wales Auditor-General's Report

Performance Audit

Identifying productivity in the public sector

NSW Health

Department of Education and Communities

Transport for NSW

NSW Police Force

Department of Justice

NSW Treasury



The role of the Auditor-General

The roles and responsibilities of the Auditor-General, and hence the Audit Office, are set out in the *Public Finance and Audit Act 1983*.

Our major responsibility is to conduct financial or 'attest' audits of State public sector agencies' financial statements. We also audit the Total State Sector Accounts, a consolidation of all agencies' accounts.

Financial audits are designed to add credibility to financial statements, enhancing their value to end-users. Also, the existence of such audits provides a constant stimulus to agencies to ensure sound financial management.

Following a financial audit the Audit Office issues a variety of reports to agencies and reports periodically to parliament. In combination these reports give opinions on the truth and fairness of financial statements, and comment on agency compliance with certain laws, regulations and government directives. They may comment on financial prudence, probity and waste, and recommend operational improvements.

We also conduct performance audits. These examine whether an agency is carrying out its activities effectively and doing so economically and efficiently and in compliance with relevant laws. Audits may cover all or parts of an agency's operations, or consider particular issues across a number of agencies.

Performance audits are reported separately, with all other audits included in one of the regular volumes of the Auditor-General's Reports to Parliament – Financial Audits.

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In accordance with section 38E of the *Public Finance and Audit Act 1983*, I present a report titled Identifying productivity in the public sector: NSW Health, Department of Education and Communities, Transport for NSW, NSW Police Force, Department of Justice, NSW Treasury.

A handwritten signature in black ink, reading 'A. T. Whitfield'.

A T Whitfield PSM
Acting Auditor-General
16 July 2015

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Executive summary

Conclusion

The aim of this audit was to examine selected areas of government activity to see if sufficient information was available to identify and assess changes in productivity. The following six activities in five agencies were examined: primary and secondary school education (the Department of Education and Communities), acute inpatient care (NSW Health), CityRail (Transport for NSW), all activity in the NSW Police Force, and the NSW Local Court (the Department of Justice).

Productivity is commonly defined as the amount of output per unit of input, such as labour or capital. Despite its importance, productivity trends in the public sector are not well understood or reported to Parliament. All of the agencies examined had an understanding and reported on input, output and quality indicators that could be used to track their productivity. However, agencies did not have clear guidance or direction about how this information could be used to track productivity.

We found that agencies had a better understanding of, and improved reporting for, efficiency. Efficiency trends are equally important to understand the impact of changing cost. However, not all agencies met their legislative requirement to report on qualitative and quantitative measures and indicators of efficiency performance where practicable.

We also found that the NSW Government's 2011 wages policy – which allows for remuneration increases above 2.5 per cent per year as long as wage offsets, including productivity improvements, are sufficient to restrain total employee expenses growth to less than 2.5 per cent – has been effective in suppressing employee expense growth.

Supporting findings

Productivity in the public sector is important

Improved public sector productivity leads to a higher standard of living for citizens. Given that the New South Wales public sector represents roughly one-sixth of the New South Wales economy, improved public sector productivity also contributes to economic growth.

While the main drivers of economy-wide productivity are outside the control of individual organisations, such as investment in education and infrastructure, improvements in labour productivity can also be driven by issues that are within the control of individual organisations. These include human capital, organisational infrastructure and use of technology.

In the absence of a competitive market, reporting on and understanding productivity within an individual government organisation is key to improving performance. It assists in identifying strategies to improve how work is being carried out to improve service delivery.

All agencies had some ability to track their productivity and efficiency

We found that all of the agencies examined had the ability to track their productivity and efficiency in their activities over time (see Exhibit i below). The Department of Justice, however, had a limited ability to track its productivity and efficiency trends due to a lack of accessible and reliable data for all its core outputs and a lack of quality indicators.

Exhibit i: Agencies with the ability to track productivity and efficiency

Agency	Productivity	Efficiency
NSW Health	Yes	Yes
Department of Education and Communities	Yes	Yes
Transport for NSW	Yes	Yes
NSW Police Force	Yes	Yes
Department of Justice	Yes, but not for all outputs and not consistent and comparable over time	Yes, but not for all outputs and not consistent and comparable over time

Source: Audit Office analysis

Note: agencies had the ability to track their productivity and efficiency if they reported on labour inputs, outputs, cost and quality.

None of the agencies reported on their productivity

We examined a number of reports to determine whether productivity and efficiency were being reported to Parliament. These reports included:

- annual reports
- NSW 2021 Performance Report
- Budget papers
- other departmental specific reports to Parliament.

None of the agencies examined reported on the productivity of the selected activities to Parliament (see Exhibit ii). Further, none of the agencies examined set productivity objectives for these activities.

Exhibit ii: Agencies reporting on their productivity and efficiency to Parliament

Agency	Productivity	Efficiency
NSW Health	✗	✓
Department of Education and Communities	✗	✗
Transport for NSW	✗	✓
NSW Police Force	✗	✗
Department of Justice	✗	✓

Source: Audit Office analysis.

NSW Government agencies require direction and leadership to help them report on productivity and set productivity objectives. NSW Treasury – which in the past has provided guidance on economic performance measurement for government sector agencies and has administrative carriage of the wages policy – is in the best position to perform this role.

Some agencies did not report on their efficiency, even though it was practicable to do so

Transport for NSW, the Department of Justice and NSW Health all reported on the efficiency of the selected activities to Parliament (see Exhibit ii).

The NSW Police Force and the Department of Education and Communities did not report on the efficiency of their activities. The efficiency of their activities is reported in the Report on Government Services, however, this document is not tabled in the NSW Parliament.

The Annual Reports (Departments) Regulation 2010 requires that qualitative and quantitative measures and indicators of performance showing the level of efficiency be reported where

practicable. Given that efficiency levels for the NSW Police Force and the Department of Education and Communities activities are reported in the Report on Government Services, it should be practicable to report on efficiency in their annual reports.

Demonstrating productivity trends is complex. Productivity trends were not always evident when using the Audit Office's methodology

An analysis of productivity in the public sector commonly requires an assessment of quantity and quality. This is difficult in the public sector because prices, which account for changing quantity and quality over time, are absent. Using physical partial labour productivity measures with quality adjustment allows some form of productivity measurement for the public sector. However, this requires judgement regarding the selection of outputs, input and quality measures.

The Audit Office developed a methodology to identify productivity trends. The available data demonstrated productivity trends for four of the six activities examined. One activity exhibited a decreasing productivity trend (secondary school education) and three activities (acute inpatient care, the NSW Local Court and the NSW Police Force) exhibited improving productivity trends.

Productivity trends could not be identified in two of the activities (primary school education and CityRail) examined. The use of an alternative method may demonstrate trends.

Efficiency trends were evident in all of the activities examined

Efficiency trends are more readily identifiable and accepted than productivity trends. The available data demonstrated efficiency trends in all of the activities examined. Four (acute inpatient care, primary and secondary school education and the NSW Police Force) of the six activities exhibited a declining efficiency trend, with two (CityRail and NSW Local Court) exhibiting an improving efficiency trend.

The 2011 wages policy was more effective at suppressing employee expenses growth than the 2007 wages policy. This was likely due to a more rigorous approval process and a greater onus on agencies to demonstrate and achieve wage offsets

Both the 2007 and 2011 wages policies required agencies to limit employee expense growth to 2.5 per cent per year. We found that the 2011 wages policy was more effective at reducing employee expense growth than the 2007 wages policy.

Between 2008–09 and 2010–11, after the onset of the 2007 wages policy, the NSW Local Court was the only activity we examined where employee expenses grew at less than 2.5 per cent per year (Exhibit iii).

Exhibit iii: Agencies with employee expense growth of less than 2.5 per cent per year

Agency	Activity	2008–09 to 2010–11	2010–11 to 2012–13
Department of Education and Communities	Primary school	✗	✗
	Secondary school	✗	✗
NSW Health	Acute inpatient care	✗	✗
Transport for NSW	CityRail	✗	✓
NSW Police Force	All	✗	✓
Department of Justice	NSW Local Court	✓	✓

Source: Audit Office analysis

Between 2010–11 and 2012–13 and after the introduction of the 2011 wages policy, the NSW Local Court, the NSW Police Force and CityRail's employee expenses grew at less than 2.5 per cent per year. Employee expenses for primary and secondary school education and acute inpatient care continued to grow at more than 2.5 per cent per year. This was despite negotiated wage increases for teachers and nurses of 2.5 per cent in 2012–13 being lower than other employee groups (Exhibit iv). This continuing growth may be due to, in part, growing service provision of health and education services. Growing service provision, regardless of productivity improvements, will likely lead to increased staffing. This increase in the number of staff, assuming 2.5 per cent wages growth, contributes to total employee expenses growing at more than 2.5 per cent.

Exhibit iv: Negotiated wage increases for selected employees

Employees	2008-09	2009-10	2010-11	2011-12	2012-13
Sworn police officers	4.0%	4.0%	4.0%	3.5%	3.2%
CityRail staff	4.0%	4.0%	4.0%	3.5%	3.5%
Teachers	4.0%	4.4%	3.8%	3.8%	2.5%
Nurses	3.9%	3.9%	3.9%	3.0%	2.5%

Sources: RailCorp Enterprise Agreement 2010; RailCorp Collective Agreement 2008; Crown Employees (Teachers in Schools and Related Employees) Salaries and Conditions Award 2009; Memorandum of Understanding between the NSW Department of Health and the New South Wales Nurses Association for the period 1 July 2010 to 30 June 2013.

The greater suppression of employee expense growth under the 2011 wages policy compared to the 2007 wages policy was driven, in part, by the Industrial Relations (Public Sector Conditions of Employment) Regulation 2014 coupled with a more rigorous approval process by the NSW Government. Under both policies there is a requirement for any proposed increase to remuneration or other conditions of employment above 2.5 per cent to be approved by the appropriate Cabinet Standing Committee before an offer is made. The 2011 wages policy set conditions which must be met for approval to be granted, for example, savings are required to be tracked and reported on (discussed below). The 2007 policy required Chief Executives Committee reviews and Cabinet Standing Committee on the Budget approval, but did not stipulate what this approval was conditional on.

The need for agencies to demonstrate and achieve wage offsets is a further reason for this greater suppression of employee expense growth. Features in the 2011 wages policy to achieve this result included the following:

- the requirement for savings to be achieved – under the 2011 policy wage offsets are required to be achieved before they can be paid. This was not the case under the 2007 policy.
- the requirement for the tracking and reporting of savings – under the 2011 policy agencies must provide details of the following before an offer is made:
 - how reform measures and cost savings will be quantified and reported
 - a monitoring plan proposing the process and time frame for assessing the delivery of each employee-related cost savings measure and identifying the payment strategy
 - evidence that the proposed employee-related cost savings are separate to measures already committed as part of efficiency dividends or whole of Government savings measures.
- full savings are not required to be awarded – under the 2011 policy not all employee-related savings are required to be awarded as increases in remuneration or other conditions of employment. Part of the savings may be retained by the agency for uses such as reinvestment.

Recommendations

By December 2015, the Department of Education and Communities, NSW Health, Transport for NSW, NSW Police Force (March 2016 for the Department of Justice) should:

1. set productivity and efficiency objectives
2. set a framework which outlines metrics and methodologies to track productivity trends
3. report on productivity trends to Parliament
4. if not already doing so, report efficiency trends to Parliament where practicable, as required by the Annual Reports (Departments) Regulation 2010

By June 2016, NSW Treasury should:

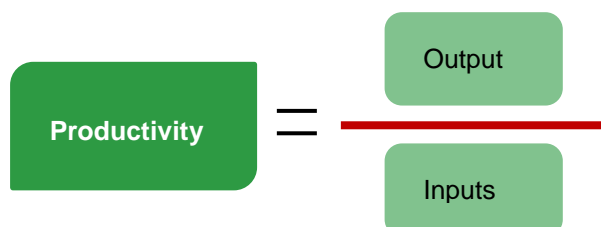
5. as part of Financial Management Transformation and implementation of Program-Based Resource Management:
 - review the Guide to Economic Performance Measurement (TPP 01 - 03) to provide more up to date guidance to NSW Government agencies on how to measure productivity and efficiency
 - provide guidance to NSW Government agencies on how to report on productivity and efficiency.

Introduction

1. What is productivity?

Productivity is commonly defined as the amount of output per unit of input, such as labour or capital.

Exhibit 1: Measurement of productivity



Productivity measures are used at business, industry and national economy levels. Depending on the context and the selection of input and output measures, productivity calculations can have different interpretations.

For this audit, productivity is measured at the most meaningful activity or service level in each selected agency. This method avoids the complexity of aggregating diverse and disparate units of outputs and inputs both within and across government departments.

Productivity is commonly expressed as a ratio of physical outputs to physical inputs (for example, number of cars produced per employee).

Inputs are usually defined in terms of:

- labour (number of employees or hours of work)
- capital (buildings, machinery and equipment).

For this audit, we have used a partial labour productivity measure – we considered labour inputs only and excluded capital. We have done this to avoid the complexities of equating physical capital and labour units. The output has been defined as the core activity delivered by the labour units in question.

The use of physical productivity measures in the public sector is attractive because it overcomes the problem of a lack of prices for public goods (see Section 3 – the challenge of measuring productivity in the public sector).

2. Why is measuring productivity in the public sector important?

The measurement of productivity has to date primarily been undertaken by the private sector to help better understand the production process. Productivity measurement is less common in the public sector because of the difficulty in determining appropriate input and output values for the public sector.

In the private sector, understanding productivity is important due to its relationship with profitability. In competitive markets, firms are 'price takers' and hence are unable to influence price by altering the levels of production. Unproductive and inefficient firms will go out of business as their marginal costs will exceed the market price so they become unprofitable. Hence, there is always an incentive for firms in competitive markets to reduce their cost.

Some government service providers, however, operate as monopolies (also known as public monopolies). They are 'price setters' and are able to make a larger return by producing less than would otherwise be produced in competitive markets. As such, there is less incentive to be more productive or efficient and keep marginal cost low. This has important implications for the welfare of citizens because they purchase lesser quality and/or quantity goods and services at a higher price than they would under competitive conditions.

In some cases the maximum price a monopolist can charge is regulated, for example, the Independent Price and Regulatory Tribunal (IPART) regulates transport fares. However, this still does not incentivise the monopolist to reduce its marginal cost. So, higher prices still exist, with the cost shared between the subsidising taxpayer and the service user.

From a macroeconomic perspective, productivity in the public sector is also important. The Public Service Commission's *State of the Sector Report 2012* notes that in 2011, the New South Wales public sector was approximately 15 per cent of the New South Wales economy. As such, improving the public sector's productivity has a significant effect on the growth of New South Wales and Australia as a whole.

Productivity is also an aspect of the *NSW Public Sector Wages Policy 2011* (2011 wages policy). The purpose of this policy is to allow increases in remuneration and other conditions of employment that do not reduce services and are consistent with maintaining fiscal sustainability.

Under the policy, increases in remuneration or other conditions of employment that increase employee-related costs by more than 2.5 per cent per year can be awarded, but only if sufficient employee-related costs savings have been achieved to fully offset the increased employee-related costs. Measures from which employee-related cost savings may arise include:

- changes to conditions of employment which increase employee **productivity** and which will be realised as cost savings
- expansion of the scope of work public sector employees perform in ways that enhance their **productivity** and realise savings.

The 2011 policy superseded the *NSW Public Sector Wages Policy 2007* (2007 wages policy) which had a similar aim of limiting total growth in employee expenses to less than 2.5 per cent per year, with any increases above 2.5 per cent tied to negotiated employee-related cost savings and reforms.

3. The challenge of measuring productivity in the public sector

Measures of productivity in the private sector are well developed. In the private sector, market prices adjust to changes in the demand and supply for goods, services and the factors of production. Resources are attracted to the areas that are the most profitable and where they are most needed. The total value of outputs for a firm or an industry can be derived by multiplying the numbers of outputs by their prices. So price automatically controls for the variations in the value of different products within and across firms and enables total firm, sector and economy productivity measurement.

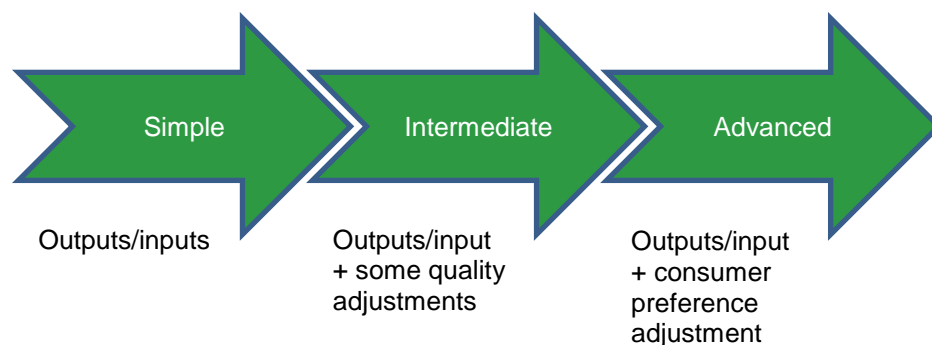
In the public sector, however, these market forces may not exist. Indeed, it is the nature of many services which leads them to be delivered by government. Using physical productivity measures in the public sector overcomes the lack of prices and enables some form of productivity measurement. However, there are two key drawbacks.

The first is that diverse outputs and inputs cannot be aggregated in any useful way so the outputs under analysis will be far narrower than what could otherwise be assessed using prices. For our purposes, the output chosen is that which best represents an agency's core activity. Inputs have been chosen as those required to deliver those outputs.

The second is that physical productivity measures do not reflect factors such as consumer preferences or quality of the output. Public sector productivity measures, therefore, need to

be augmented to take account of these factors to provide a more mature and balanced assessment. Exhibit 2 shows the maturity levels for productivity measures.

Exhibit 2: Maturity of productivity measurement methodologies



Source: Audit Office analysis

Appendix 3 of this report outlines the method for assessing productivity used in this audit – the ‘compass’ method. This is an example of a quality-adjusted productivity measure of intermediate maturity.

4. Relationship between efficiency and productivity

It is important to measure both productivity and efficiency to understand the effects of changing cost and volume. Both efficiency and productivity are measures of the amount of resources required to produce an output. The key difference for our purposes, however, is that productivity expresses resources or inputs in physical units, whereas, efficiency expresses resources or inputs in monetary units. So for our purposes efficiency has been defined as cost per unit of output.

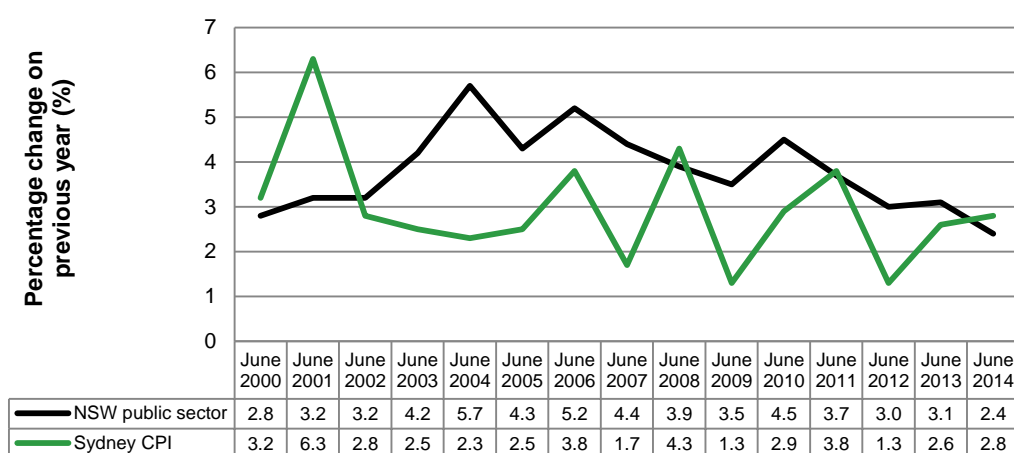
Productivity and efficiency are closely related, but not in every case. For example, a change in work practices leading to more output for the same number of employees is considered a productivity improvement. If costs grow at or less than inflation then this should also equate to an efficiency improvement. If, however, costs grow faster than inflation, it is possible to have a productivity improvement associated with a decline in efficiency.

5. Public sector wage growth and the wages policy

Between 2002 and 2007, the Australian economy experienced significant and prolonged economic growth largely driven by the resources boom. This resulted in the economy operating at close to full capacity placing downward pressure on unemployment. According to the Reserve Bank of Australia average Gross Domestic Product (GDP) growth over this period was roughly 3.5 per cent and unemployment fell from 6.5 per cent in 2002 to just over four per cent in 2007. As an employment market tightens, workers who are in high demand are able to negotiate higher wage increases.

During this prolonged economic growth, Australian governments, including the NSW Government enjoyed significant revenue growth. According to *Budget Papers 2014–15*, revenue grew at an average of just under six per cent per year over this period. This revenue growth allowed the NSW Government to meet the pay demands of public service employees and compete for employees in a tight labour market. As shown in Exhibit 3 below, New South Wales public service employees received wage increases that were regularly greater than the inflation rate.

Exhibit 3: New South Wales public sector wages and inflation growth



Source: Australian Bureau of Statistics, Wage Price Index 6345.0; 6401.0 Consumer Price Index, Australia.

Following the 2007–09 financial crisis, economic growth slowed and unemployment began to rise. According to the Reserve Bank of Australia average GDP growth between 2008 and 2014 was roughly 2.5 per cent and unemployment grew from just over four per cent to over six per cent by 2014. Given this loosening in the labour market, employees had less power to negotiate higher wages. Since June 2010, public sector wages growth has slowed and, in June 2014, dipped below inflation (Exhibit 3).

Actual and forecasted NSW budget revenue growth also slowed following the 2007–09 financial crisis. *NSW Budget Papers 2014–15* estimate actual and forecasted revenue growth between 2011–12 and 2017–18 to average 4.5 per cent. To recognise the changed economic conditions towards lower wage growth, the NSW Government issued the 2007 wages policy. The intent of this policy was to allow fair working conditions and allow reasonable wage increases that did not increase costs to the community or reduce services.

The 2007 wages policy was later superseded by the 2011 wages policy. It had a similar intent which is to allow fair working conditions and allowing increases in remuneration and other conditions of employment that do not reduce services and are consistent with maintaining fiscal sustainability.

Key findings

1. NSW Health – acute inpatient care

In this section, we assess whether NSW Health had the ability to track productivity and efficiency trends for acute inpatient care. We also examine whether productivity and efficiency trends were evident and reported to Parliament.

Finding: By using existing data, NSW Health has the ability to track productivity trends for acute inpatient care. However, there are data limitations and contextual factors which must be understood when interpreting these trends. NSW Health is exploring better ways to explain and communicate its productivity.

NSW Health also has the ability to track its efficiency trends consistently over the 2008–09 to 2012–13 period.

In 2012–13, NSW Health did not report on the productivity of acute inpatient care to Parliament. NSW Health reported a number of efficiency indicators, such as average length of stay in hospital and waiting times, to Parliament. It did not, however, report on its cost per National Weighted Activity Unit (NWAU) to Parliament.

For the period 2008–09 to 2012–13, the Audit Office's methodology found that NSW Health's productivity trend was improving.

Available data demonstrated efficiency trends, in terms of cost per unit of output, over the entire period. Between 2008–09 to 2012–13, efficiency, as defined by real cost per NWAU exhibited a negative trend.

Wage increases negotiated with NSW Health unions were contrary to the 2007 wages policy intent to limit employee-related expenses to a net cost of 2.5 per cent per annum. This departure from the wages policy was approved by the NSW Government. While employee expenses continued to grow at greater than 2.5 per cent per annum after the introduction of the 2011 wages policy, this was mainly due to existing agreements entered into before the policy commenced.

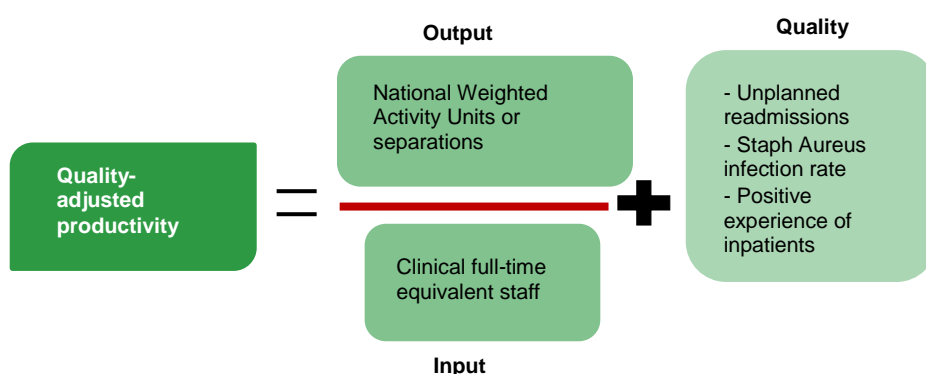
1.1 Does NSW Health have the ability to track the productivity and efficiency for acute inpatient care?

By using existing data, NSW Health has the ability to track productivity trends for acute inpatient care. However, there are data limitations and contextual factors which must be understood when interpreting trends.

NSW Health has the ability to track efficiency trends consistently over the 2008–09 to 2012–13 period. Cost per NWAU is a measure of efficiency and was introduced when Activity Based Funding (ABF) took effect from 1 July 2012. This indicator can be backcast to provide a meaningful comparison of efficiency over time.

As discussed in the Introduction, a productivity measurement methodology of intermediate maturity requires an understanding of the inputs and outputs of production and the quality of that production. Exhibit 4 outlines the key indicators which could be used to track productivity for acute inpatient care.

Exhibit 4: Key indicators to track productivity for acute inpatient care



Outputs

For our analysis of physical productivity we have used two measures of output:

- **NWAU** – is a measure of service activity expressed as a common unit and is used as our primary output indicator. NWAUs are the pricing mechanism for public hospital services under the ABF system. This approach provides a sophisticated way of comparing each public hospital services by weighting for its clinical complexity.
- **Separations** – the number of patients treated by public hospitals. This is a more simplistic measure of output and does not account for clinical complexity. Separations have been used as a secondary output indicator to validate NWAU results.

Both measures of output are for acute inpatient care only. Acute inpatient care is a level of health care in which a patient is treated in hospital for a brief but severe episode of illness, for conditions that are the result of disease or trauma, and during recovery from surgery. Other forms of care such as non-admitted and mental health were not included because this data was less reliable.

Inputs

Clinical full-time equivalent (FTE) staff has been used for labour inputs as it is the best measure of effort to produce the output in question. It should be noted that clinical staff may be engaged in other outputs such as emergency department and outpatient clinics. Ideally staff engaged in delivering acute inpatient care only should be used, however, this data was not available.

Quality

Including indicators of quality provides a more balanced view of productivity. The importance of this balanced approach is stressed in the 2013 Report of the Mid Staffordshire National Health Service Foundation Trust Public Inquiry. This report investigated systemic failures by the Trust to treat its patients with care and respect. The Trust also had a higher mortality rate when compared with other similar trusts. One of the many key findings was that there was an over-emphasis on financial indicators and not enough emphasis on quality of care. Our productivity measurement methodology ensures quality is considered of equal importance as quantity.

Key quality indicators used by NSW Health for acute inpatient care include:

Staphylococcus aureus (Staph Aureus) infection rate

A bacterium that colonises human skin and mucosa and is amongst the most common and more serious causes of community and healthcare associated sepsis. Incidence of healthcare associated Staph Aureus infection is used as an outcome indicator for hand hygiene compliance of healthcare workers. The NSW Government's State Plan NSW 2021 sets a target of decreasing healthcare associated bloodstream infections by remaining under the Council of Australian Government's benchmark of 2.0 per 10,000 patient bed days.

Inpatient experience

This measures the proportion of patients that have a positive inpatient experience. As this indicator is based on a survey of a sample of patients, confidence intervals are required to determine if any change is statistically significant. According to the Bureau of Health Information (BHI), for a sample size of more than 2,000, a 95 per cent level of confidence gives an interval of plus or minus 2 per cent.

Unplanned readmissions

This measures all unplanned readmissions within 28 days of separation. The NSW Government's State Plan *NSW 2021* sets a target of reducing rates of unplanned and unexpected readmissions as a percentage of total hospital admissions (five per cent per year over four years).

According to the BHI, unplanned hospital readmissions can point to suboptimal patient management or poor care coordination, although some admissions may be unavoidable, occurring when a patient's condition unexpectedly deteriorates.

NSW Health has raised a number of issues with using unplanned admissions as an indicator of the effectiveness of the public hospital system. These include:

- data quality limitations (for example, planned returns to hospital incorrectly flagged as unplanned)
- an inability to identify which readmissions were directly related to potential deficiencies in clinical care during the initial admission
- an inability to discern which readmissions were potentially preventable.

NSW Health commissioned the University of Adelaide to undertake a rapid review of international literature on unplanned hospital readmission rates and their use in clinical practice and health service management. The review found there were no universal data collection and analysis methods for comparisons across hospitals. Only a quarter of unplanned readmissions to hospital were found to be linked to deficiencies in care.

This finding is supported by local analysis of unplanned readmission data performed by the Northern NSW Local Health District. Of 109 cases examined, only 16 (15 per cent) indicated that factors related to hospital care during the previous admission were relevant to the readmission.

The absence of reliable and comprehensive data for measuring unplanned readmissions is problematic. If the drivers behind movements in the indicator are not well understood, it is difficult for NSW Health to effectively identify strategies to achieve its *NSW 2021* target.

An alternative or proxy measurement for this indicator has not been identified.

Communicating productivity in health

NSW Health

NSW Health is exploring better ways to communicate its productivity and has developed a framework for explaining productivity in health. The framework aims to develop a common understanding of productivity and efficiency in the health sector across stakeholder groups. The framework was developed by NSW Health in collaboration with Australian Health Minister's Advisory Council colleagues. Key aspects of the framework include:

- identifying technical, dynamic, allocative and distributive efficiency factors as drivers of productivity
- distinguishing between outputs and measures of those outputs. For example, a surgery (process) may replace a hip (output), but also leads to important outcomes such as

improved mobility and return to work. These outcome considerations usually do not enter the production function but are key within a health context

- considering the triple bottom line in healthcare: quality, effectiveness and value for money.

Other research

In their 2014 paper on efficiency and productivity in the Australian health care sector, Cullen and Ergas also explore the importance of the health system's contribution to productivity in the Australian economy. They conclude that there would be value in developing a whole-of-system measure of productivity, but given data constraints this measure can only be built at a high level, such as the relationship between Quality of Life Adjusted Years (QALYs) and health expenditure per capita.

Our report may assist the productivity discussion by applying conventional productivity measurement methods to health data. Given the richness of NSW Health data we believe a more detailed analysis, beyond QALYs and health expenditure per capita, is possible.

Efficiency

As discussed in the Introduction, efficiency for the purposes of this audit has been defined as the cost per unit of output. Similar definitions and measurements of NSW Health's efficiency have changed markedly since the introduction of ABF.

A program of significant reform to the NSW Health system beginning in 2010–11 has supported the introduction of the new funding model. The change in funding model was coupled with governance reform to move from eight area health services to 15 Local Health Districts (LHDs) and three Specialty Health Networks (SHNs). NSW Health advised that this has decentralised hospital and health services management, increased responsiveness to local clinicians and local communities, and increased accountability to drive improvements in performance.

Cost per National Weighted Activity Unit (July 2012 onwards)

The national ABF system came into effect from 1 July 2012. ABF links funding to activity, creating an explicit relationship between funds allocated and services provided. The intent is to encourage a stronger focus on outputs and outcomes, and also on quality as a measure of the cost effectiveness of expenditure.

ABF is a purchaser-provider model whereby NSW Health purchases activity (expressed as National Weighted Activity Units) at an agreed price from LHDs and SHNs.

NWAU is the pricing mechanism under the ABF system. An NWAU is a measure of health service activity expressed as a common unit. It provides a way of comparing and valuing each public hospital service (whether it relates to an admission, emergency department presentation or outpatient episode), by weighting it for its clinical complexity.

The Independent Hospital Pricing Authority (IHPA) determines the National Efficient Price (NEP) per NWAU each year, setting a price signal or benchmark about the efficient cost of providing public hospital services in Australia. For example, the NEP for 2013–14 was \$4,993 per NWAU(13).¹ The level of Commonwealth Government funding that flows to states and territories for public hospital services is currently based on the NEP.

To guide the allocation of funding to LHDs and SHNs, the NSW Ministry of Health sets a State Price, based on the most recent costing data and considering the total pool of funds available and the volume and mix of services. So, LHD and SHN's budgets for activity are now largely determined by the number of NWAUs purchased multiplied by the State Price. For example, NSW Health may purchase 150,000 NWAUs from a health district. Given a

¹ The NWAU is updated annually and is named to reflect the year of its operation. In 2013–14, the NWAU is called NWAU(13).

NSW State Price of \$4,671 per NWAU in 2013–14, then the health district's budget for its activity would be \$700.7 million in 2013–14.

Under the ABF system, average cost per NWAU is a measure of efficiency. The change in funding regime complicates the tracking of efficiency trends over the time period of this audit, because cost per casemix-adjusted separation (see below) and cost per NWAU are not comparable as they use two very different mechanisms for weighting activity. NSW Health has, however, been able to provide backcast cost per NWAU data to enable efficiency trends to be tracked over the time period.

Cost per casemix-adjusted separation (prior to July 2012)

Prior to the implementation of ABF, hospitals were funded either through adjustments to the historical base. Under this regime, cost per casemix-adjusted separation could be used to determine the cost per unit of output. The cost per casemix-adjusted separation was a measure of the average recurrent expenditure for each admitted patient, adjusted using Australian Refined Diagnosis Related Groups (AR-DRG) cost weights for the resources used for the separation. This efficiency metric was measured and tracked in a historical manner and not used to make funding decisions in NSW Health.

The Australian Institute of Health and Welfare reported cost per casemix-adjusted separations up to and including 2011–12. It ceased reporting the figure in subsequent years partly because of concerns about the potential for this indicator to be confused with the Independent Hospital Pricing Authority's (IHPA) calculation of the national efficient price and the allocation of activity based funding from the 2012–13 reporting period onwards.

Given that cost per NWAU is a relatively new measure of efficiency, it is worthwhile to validate trends in efficiency using a secondary indicator. We have used cost per casemix-adjusted separation as our secondary indicator.

1.2 Is NSW Health reporting on its productivity and efficiency to Parliament?

The reports to Parliament we examined included:

- annual reports
- NSW 2021 Performance Report
- Budget papers
- Bureau of Health Information reports.

In 2012–13, NSW Health did not report on its productivity in its annual report, Budget papers or the NSW 2021 Performance Report.

The BHI also did not report on NSW Health's productivity. The BHI is a Board-governed Statutory Health Corporation that is part of NSW Health. The BHI's role is to provide independent reports to government, the community and healthcare professionals on the performance of the NSW public health system, including safety and quality, effectiveness, efficiency, cost and responsiveness of the health system to the needs of the people of New South Wales.

NSW Health also did not set productivity objectives. NSW Health did, however, report on a number of efficiency indicators in its annual report including:

- transfer from ambulance to emergency: times for transfer of care improved by 5.7 per cent compared to 2013–14
- average length of stay in hospital: a 2.7 percentage point decrease
- elective surgery: 123,447 fewer days spent waiting for elective surgery compared to 2011–12
- targets for emergency patients: nine per cent improvement over six months on National Emergency Access Target (NEAT) performance compared to the previous year

- targets for elective surgery: 97.1 per cent admitted within clinically appropriate timeframe – overall improvement of 1.1 per cent compared to the previous year.

It should be noted that resourcing decisions impact on these efficiency indicators.

The BHI also reported on various system-wide efficiency indicators, including cost per unit of output, in its *Health in Focus* reports. The efficiency indicators that the BHI reports on include:

- recurrent hospital cost per casemix-adjusted separation
- spend on healthcare per person versus years lost for every 100,000 people
- percentage of current health expenditure on administration.

However, NSW Health and the BHI did not report on NSW Health efficiency in terms of cost per NWAU.

NSW Health met its requirements under the Annual Reports (Departments) Regulation 2010 for qualitative and quantitative measures and indicators of performance showing the level of efficiency to be reported where practicable. However, we believe efficiency reporting can be improved by including cost per NWAU.

1.3 Does the available data demonstrate productivity and efficiency trends?

Productivity trends – NWAU per clinical FTE staff

For the period 2008–09 to 2012–13, the Audit Office’s methodology (the ‘compass’ method – see Appendix 3) showed productivity trending positively for acute inpatient care.

In summary:

- physical productivity, NWAUs per clinical FTE staff increased from 27.3 to 28.6
- there was a lack of metrics to comprehensively understand quality at a system-wide level. Based on a limited set of indicators, the quality of care was deemed stable:
 - Staph Aureus infections declined
 - life expectancy improved
 - inpatient satisfaction was stable because movement in the indicator was statistically insignificant
 - unplanned hospital admissions increased, but this does not necessarily entirely reflect poorer hospital care and could be the result of low socioeconomic status, low overall general health and age, as discussed above.

The detailed assessment can be found in Appendix 4.

The main data limitation to our approach is that we have used clinical FTE staff for our inputs but only used a subset (acute inpatient care) of outputs produced by these staff. As such our results are less reliable because changes in other areas of activity may impact on our productivity result. For example, if more staff time is spent on outpatient care, this may result in a productivity decline because we have only accounted for the increase in inputs and not accounted for the impact on outpatient outputs. A better approach is to use staff time in the delivery of acute inpatient care only. However, this analysis was hampered by the inability to split staff time into service streams.

An important contextual factor to consider when interpreting results is the changing profile of NSW Health’s workforce. For example, between 2010–11 and 2013–14 NSW Health increased the number of intern positions resulting in increased clinical FTE staff which may result in a negative impact on productivity. From a cost perspective, however, this has contributed to a decline in the average cost of the medical workforce of \$135,444 to \$134,277 per clinical FTE staff, or 0.3 per cent per year. So, changes in workforce profiles may result in declining productivity but improved efficiency.

Productivity trends – separations per clinical FTE staff

As discussed above, we have used separations per clinical FTE staff to validate the physical productivity results obtained from our primary indicator. As shown in Exhibit 5 below, physical productivity for acute inpatient care improved from 33.13 to 36.23 separations per clinical FTE staff.

Exhibit 5: Separations per clinical FTE staff

Measure	Description	2008–09	2012–13
Output	Acute inpatient separations	1,485,273	1,689,800
Input	Clinical FTE staff	44,836.72	46,645.21
Physical productivity	Separations/clinical FTE staff	33.13	36.23

Source: NSW Health.

Importantly, this approach does not account for changes in clinical complexity. When using separations as the output, clinical complexity is assumed to be equal for all procedures. In reality this is not the case. Clinical complexity varies across procedures, patients and time.

Efficiency trends

As discussed earlier, cost per NWAU is NSW Health's key cost per unit of output (i.e. efficiency) indicator. Given that cost per NWAU is a relatively new efficiency indicator, we have also presented cost per casemix-adjusted separation as a secondary indicator for validation purposes.

The analysis shows that efficiency for acute inpatient care was trending negatively before the introduction of ABF system, but early indications suggest an improvement in efficiency post-ABF.

Real average cost per NWAU

The results show that between 2008–09 and 2012–13 efficiency for acute inpatient care declined. The real average cost per NWAU increased by 13 per cent over five years (see Exhibit 6). Importantly, real cost of care declined shortly after the introduction of the ABF system. This suggests efficiency has improved post-ABF, but the analysis of future data is required to determine if this is an ongoing trend.

Exhibit 6: Real average cost per NWAU for ABF facilities for the acute inpatient care using NWAU15 (\$)

	2008–09	2009–10	2010–11	2011–12	2012–13
Cost per NWAU NSW - real	3,830	4,117	4,163	4,369	4,333

Source: Independent Hospital Pricing Authority, using data collected under the National Hospital Cost Data Collection

Notes: - 2013–14 yet to be processed

- nominal cost deflated using general government final consumption expenditure, chain price index to arrive at real cost

- excludes line items such as depreciation, medical indemnity premiums, Public Private Partnership finance costs and actuarial annual and long service leave adjustments.

- to compare NWAU over time, NWAU15 has been applied to the activity and cost data for all years

- ABF is applied to those hospitals for which such a funding mechanism is appropriate. Smaller hospitals, such as rural facilities, are funded utilising a Block Funding mechanism.

Average cost per casemix-adjusted separation

Prior to the implementation of the ABF funding model, cost per casemix-adjusted separation could be used to describe cost per unit of output (i.e. efficiency) measure. Cost per casemix-adjusted separation was reported between 2008–09 and 2011–12 by the Australian Institute of Health and Welfare in its Australian Hospital Statistics report. This report provides a

summary of characteristics and activity of Australia's hospitals, including New South Wales. The report states that cost per casemix-adjusted separation can be taken as a measure of the relative technical efficiency of hospitals.

The results show that between 2008–09 and 2011–12 efficiency for acute inpatient care declined. The real average cost per casemix-adjusted separation was 8.7 per cent higher in 2011–12 than in 2008–09 (see Exhibit 7).

Exhibit 7: Cost per casemix-adjusted separation (\$)

	2008–09	2009–10	2010–11	2011–12
Nominal	4,454	4,557	4,904	5,280
Real (in 2011–12 dollars)	4,857	4,836	4,994	5,280

Source: Australian hospital statistics 2008–09, 2009–10, 2010–11 and 2011–12

Notes: – nominal cost deflated using general government final consumption expenditure, chain price index to arrive at real cost

- excludes depreciation

- 2011–12 includes medical indemnity of \$195 million. This was excluded in other years.

As discussed above, cost per casemix-adjusted separation is an indicator of less value to NSW Health as reporting has been discontinued and the information was never used for funding purposes. Despite this, the analysis shows how efficiency trends have been historically trending and is consistent with cost per NWAU trends.

In its *Healthcare in focus report: 2013*, the BHI reported on recurrent cost per casemix-adjusted separation (including depreciation) for 2011–12. It presented the indicator as a snapshot in time compared to other Australian jurisdictions. The graph showed that New South Wales (\$5,455) had the fourth lowest recurrent cost per casemix-adjusted separation after Victoria (\$4,985), South Australia (\$5,413) and Queensland (\$5,425). New South Wales' recurrent cost per casemix-adjusted separation was higher than the Australian average (\$5,407).

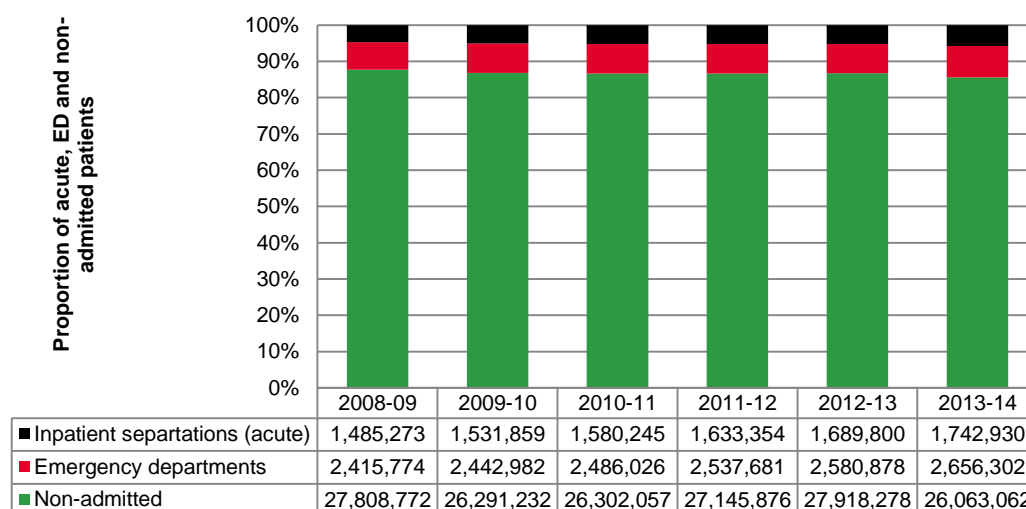
Allocative efficiency

NSW Health is also focused on ensuring that the right treatment is provided to its patients at the right time (allocative efficiency). This means that patients may be treated outside of hospital where it is appropriate to do so ensuring those requiring hospital treatment gain improved access.

Globally, there has been a shift in the disease burden from acute conditions treated on an episodic basis to chronic and complex conditions that require more dynamic management. NSW Health has developed new models of care to meet these changing needs and transitioned to an integrated health system, connecting services across the continuum of care with greater emphasis on community-based service delivery, often in a non-admitted or outpatient setting. For example, the NSW Integrated Care Strategy involves a system of care and support based around the needs of the individual, providing the right treatment in the right place at the right time and in the most effective and efficient way. NSW initiatives such as the Whole-of-Health Program, Hospital in the Home, and Chronic Disease Management Program that streamline the patient journey by connecting care and improving access also reduce demand for acute hospital attendances and admissions.

Despite NSW Health's focus on non-admitted care, the number of non-admitted patients as a proportion of all care types fell marginally between 2008–09 and 2012–13 (Exhibit 8). Over this period, the number of non-admitted patients grew, but at a slower rate than acute inpatient and emergency department patients.

Exhibit 8: Proportion of acute inpatient, emergency department and non-admitted patients



Source: NSW Health annual reports, Health System Information and Performance Reporting Branch, December 2014.

Notes: Includes services contracted to the private sector. Excludes privately referred MBS Billed patient services. Changes to national counting rules for non-admitted patient services implemented during 2012–13 have impacted the results for 2013–14. Therefore, results for 2013–14 are not directly comparable to previous years.

Wages policies and acute inpatient care

Intent of the wages policy

As discussed in the Introduction above, the NSW Government introduced two wages policies (2007 and 2011) with the aim of maintaining fair working conditions and allowing increases in remuneration and other conditions that do not increase costs to the community or reduce services.

2007 wages policy

The 2007 policy stated that future increases to employee-related expenses will be limited to a net cost of 2.5 per cent per annum, with any additional increases above 2.5 per cent per annum tied to negotiated employee-related cost savings and reforms. The policy required any offers to increase wages and/or conditions by more than 2.5 per cent per annum and the associated reforms and savings to be approved by the Cabinet Standing Committee on the Budget.

The wage increases negotiated with NSW Health unions were contrary to the intent of the 2007 wages policy. Although productivity offsets were achieved, they were not sufficient to ensure employee-related expenses growth was limited to 2.5 per cent per year. The NSW Government approved this departure from the policy. So, NSW Health entered into negotiations with NSW Health unions and associations in accordance with NSW Government approval.

Approved wage increases were 3.9 per cent per year for 2008–09 and 2009–10 for the Nurses Association and 3.9 per cent per annum between 2008–09 and 2010–11 for the Health Services Union. In 2010–11, employee costs for acute inpatient care equated to \$4.1 billion compared to \$3.8 billion in 2008–09. This equates to an increase in employee costs of 4.2 per cent per year on average. It should be noted that we have only examined the growth in employee expenses for acute inpatient care rather than total employee cost growth. We have done this because we have limited our productivity analysis to acute inpatient care rather than whole of health productivity.

2011 wages policy

In June 2011, the NSW Government revised the wages policy and made the requirements for proving and demonstrating wage offsets more robust. As a result, savings must now be achieved before they are paid to employees and agencies must provide detailed plans regarding its cost savings before offers over 2.5 per cent per year are made.

Despite this policy change, employee costs for acute inpatient care grew at more than 2.5 per cent per year. Between 2010–11 and 2012–13, employee costs for acute inpatient care increased by 5.5 per cent per year on average (from \$4.1 billion in 2010–11 to \$4.5 billion in 2012–13).

This was due, in part, to industrial awards that were concluded under the 2007 wages policy (as described above) continuing to apply following the introduction of the 2011 wages policy. The approved wage increases for the Nurses' Association was 3.9 per cent in 2010–11, 3.0 per cent in 2011–12 and 2.5 per cent in 2012–13, with the 2.5 per cent amount being subject to discussions regarding potential offsets. It should be noted that wage increases agreed to post the 2011 wages policy have been no more than 2.5 per cent per annum.

Growth in service provision

It is likely that growth in health service provision also contributed to the rise in total employee expenses following both the 2007 and 2011 wages policies. The NSW Government has increased health service provision in response to an ageing population. Health sector budget expenses in 2013–14 were \$17.8 billion, or 27.6 per cent of total general government expenses, compared to \$12.9 billion, or 27.3 per cent of total general government expenses in 2008–09. The requirement for employee expenses to grow less than 2.5 per cent does not account for any increased service provision which may lead to increased staff numbers and therefore higher employee expenses.

Recommendations

By December 2015, NSW Health should:

- report its real cost per NWAU to Parliament (either through a NSW Health report or through a Bureau of Health Information report)
- set productivity and efficiency objectives
- report its productivity trends to Parliament using either the Audit Office's methodology or another appropriate methodology
- report its efficiency trends to Parliament.

2. Primary and secondary school education

In this section, we examined whether the Department of Education and Communities had the ability to track productivity and efficiency trends for primary and secondary school education. We also examined whether productivity and efficiency trends were evident and whether the trends were reported to Parliament.

Finding: By using existing data, the Department of Education and Communities has the ability to track productivity and efficiency trends for primary and secondary school education. However, there are data limitations and contextual factors which must be understood when interpreting trends.

In 2012–13, the Department of Education and Communities did not report on the productivity or efficiency of primary and secondary school education.

Available data does demonstrate productivity and efficiency trends for secondary school education. For primary school education, only efficiency trends are identifiable. For the period 2008–09 to 2012–13, quality-adjusted productivity for secondary school education was trending negatively. Over the same period, efficiency for both primary and secondary school education was trending negatively.

After the introduction of the 2007 wages policy, employee expenses for primary and secondary education exceeded 2.5 per cent per year with teachers receiving wage increases of more than 2.5 per cent. This was also the case after the introduction of the 2011 wages policy.

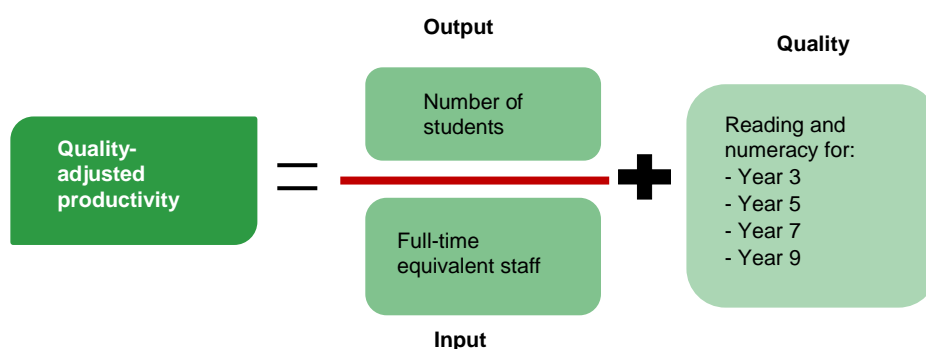
2.1 Does the Department of Education and Communities have the ability to track the productivity and efficiency of primary and secondary school education?

By using existing data, the Department of Education and Communities has the ability to track productivity and efficiency trends for primary and secondary school education. However, there are data limitations and contextual factors which must be understood when interpreting trends.

Research has identified that school productivity matters from a policy-making perspective because it shows the results a school system achieves for a given level of input. For example, an investment decision between reducing class sizes or increasing teacher quality should be weighed against the results a school system would achieve under each option.

The Department of Education and Communities agrees with the notion of a robust, publicly available measure of productivity in education and that productivity may be defined as outputs divided by inputs. As discussed in the Introduction, a productivity measurement methodology of intermediate maturity requires an understanding of the inputs and outputs of production and the quality of that production. Exhibit 9 outlines the key indicators which could be used to track productivity for primary and secondary school education.

Exhibit 9: Key indicators to track productivity for primary and secondary school education



Inputs and outputs

Total full-time equivalent (FTE) staff has been used for labour inputs. Total wages represent roughly 64 per cent of total costs. The core output of both primary and secondary school education is defined as the number of teaching hours provided to students. In the absence of teaching hours data the number of students educated has been used as a proxy.

Quality

The key indicators to gauge the quality of primary and secondary school education are National Assessment Program – Literacy and Numeracy (NAPLAN) results. NAPLAN is a national annual assessment for students in Years 3, 5, 7 and 9 which tests the following four areas:

- reading
- writing
- language conventions
- numeracy.

School systems and governments benefit from NAPLAN through the use of valuable data to support good teaching and learning, and school improvement.

The Department of Education and Communities advised that NAPLAN results may be incomplete, inconsistent and ill-suited for productivity analysis. Limitations of NAPLAN results are as follows:

- variation of status or 'absolute' measures (i.e. comparing the performance of one grade level over time) may be due to factors other than student ability. Examples of these factors include:
 - results being influenced by the changing difficulty of tests rather than the ability of students
 - the changing profile of students resulting from different cohorts moving through higher grades and as students move between government and non-government schools
 - measurement error resulting from natural variation in individual student performance.
- NAPLAN is a quality measure for all New South Wales students, not solely for Government schools.

The Department of Education and Communities advised that value-added measures are more appropriate because they are less susceptible to these shortcomings. The value-added measure proposed by the Department of Education and Communities determines the contribution that an individual school makes to the learning of its students compared to that of the average school. This measure, however, is ill-suited to productivity analysis because it is not possible to obtain an aggregate or whole of department figure.

In 2010, a Parliamentary Inquiry found that testing literacy and numeracy was of fundamental importance. The Parliamentary Committee recognised the limitations of test quality but acknowledged that NAPLAN tests are subject to the same limitations in precision

which apply to all such assessments. As such, we support the use of NAPLAN results as a quality indicator provided its limitations are understood.

We have decided to adopt a status or 'absolute' measures approach to quality adjustment (i.e. comparing the performance of one grade level over time). This is the simplest measure of student outcomes and provides a snapshot of achievement. We have also decided to use all schools (i.e. including both government and non-government schools) NAPLAN results because:

- the Department of Education and Communities advised us that tests of significance for government-only school results were not able to be calculated
- the results are a reasonable proxy of government school results as roughly 66 per cent of New South Wales students are educated in government schools and a comparative analysis shows the results for government and all schools are trending in similar directions.

Efficiency

Data are also available to measure the efficiency of primary and secondary school education. Exhibit 10 shows data in the Report on Government Services (ROGS) which could be used to report on efficiency.

Exhibit 10: Key efficiency indicators

Government recurrent expenditure on staff per FTE student in government schools
Recurrent expenditure per FTE student in government schools

Source: Report on Government Services

2.2 Is the Department of Education and Communities reporting on the productivity and efficiency of primary and secondary education to Parliament?

The reports to Parliament we examined included:

- annual reports
- NSW 2021 Performance Report
- Budget papers

In 2012–13, the Department of Education and Communities did not report on the productivity or efficiency of primary or secondary school education in any of the above reports.

The Annual Reports (Departments) Regulation 2010 requires qualitative and quantitative measures and indicators of performance showing the level of efficiency be reported where practicable. Given that the efficiency of primary and secondary school education is reported in publications such as the Report on Government Services, it is likely to be practicable to report on efficiency in the Department of Education and Communities' annual report.

2.3 Does the available data demonstrate productivity and efficiency trends?

Available data demonstrates productivity and efficiency trends for secondary school education but not for primary school education.

We applied the Audit Office's methodology (the 'compass' method – see Appendix 3) to determine the productivity of primary and secondary school education.

Primary school education

For the period 2008–09 to 2012–13, quality-adjusted productivity trends for primary school education could not be identified.

In summary:

- physical productivity, the average number of students per teacher, declined
- the quality of primary schools improved because:
 - the proportion of Year 5 students' reading at and above the minimum standard increased
 - all other movements in key quality indicators were statistically insignificant and hence deemed to be constant.

The detailed assessment can be found in Appendix 5.

Over the same period, efficiency trended negatively. As shown in Exhibit 11, in 2012–13, the real average recurrent expense per primary school student was \$14,424, compared to \$13,363 in 2007–08. This equates to a real increase (over and above inflation) of eight per cent over the period.

Exhibit 11: Real average recurrent expense per primary school student in 2012–13 dollars

Year	Expense (\$)
2008–09	13,363
2009–10	14,084
2010–11	13,950
2011–12	14,870
2012–13	14,424

Source: Report on Government Services 2014

Note: this includes expenses incurred both in and outside of school.

Secondary school education

For the period 2008–09 to 2012–13, quality-adjusted productivity for secondary school education trended negatively.

In summary:

- physical productivity, the average number of students per teacher, declined
- the quality of secondary schools declined because:
 - the proportion of Year 9 students' numeracy at and above the minimum standard decreased
 - all other movements in key quality indicators were statistically insignificant and hence deemed to be constant.

The detailed assessment can be found in Appendix 6.

Over the same period, efficiency trended negatively. As shown in Exhibit 12, in 2012–13, the real average recurrent expense per secondary school student was \$16,827, compared to \$16,582 in 2008–09. This equates to a marginal real increase (over and above inflation) of one per cent over the period.

Exhibit 12: Real average recurrent expense per secondary school student in 2012–13 dollars

Year	Expense (\$)
2008–09	16,582
2009–10	16,888
2010–11	16,366
2011–12	17,539
2012–13	16,827

Source: Report on Government Services 2014

Note: expenses incurred both in and outside of school.

Other research into productivity in New South Wales schools

Research has also demonstrated that productivity trends are identifiable for secondary school education in New South Wales. In 2013, the Public Service Commission engaged Deloitte Access Economics to investigate measures and drivers of productivity in the public sector. A theoretical model to measure productivity was tested by applying data from selected service delivery areas in health, education and transport. The results showed that the theory could be applied to some service delivery areas, but that much more work was required before a robust and reliable measure of all public sector productivity could be produced and practically used.

With regard to education, the report found that between 2010–11 and 2011–12 the quality-adjusted output levels for secondary education went down while inputs went up, resulting in a decline in productivity. The report noted, however, that data was not reliable.

A research paper into New South Wales schools found that for young teenagers (aged 13 to 14 years) there was a small but statistically significant fall in numeracy between 1964 and 2003, but not in literacy. This still held after adjusting for student demographics. Real expenditure per child increased substantially over this period, implying a fall in school productivity.

Objectives other than productivity and efficiency

The Department of Education and Communities disagrees with the ‘translation into the productivity measures suggested by the Audit Office’ and the ‘conceptual validity’ of the proposal. The Department of Education and Communities suggested that productivity should not only identify inputs and outcomes, but also consider goals of excellence and equity in contributing to a strong, equitable and just society.

These goals are captured under the 2008 ‘Melbourne Declaration on Educational Goals for Young Australians’. In the declaration, all Australian education ministers agreed to two overarching goals for schooling in Australia:

1. Promote equity and excellence
2. Support all young Australians to become successful learners, confident and creative individuals, and active and informed citizens.

These goals, however, have no specific measures or targets that could be used to calculate productivity or efficiency.

We acknowledge that schools provide a range of outputs, which include measureable things such as numeracy and literacy, but also less measureable things such as life-skills training, a sense of community, and the basis for a civilised and caring society. While these considerations are important, these are not the focus of a productivity analysis.

Public sector productivity – the main focus of this report – is a single, deliberately limited measure, focusing solely on how many outputs are produced for a given level of inputs. It needs to be carefully separated from concepts such as value for money which is a broader

concept than productivity and determines whether societal outcomes are being achieved in a cost-effective manner.

Policy and contextual factors

Greater investment in the education portfolio

Significant investment in recent years in the education portfolio has impacted on productivity and efficiency.

First, class size policies impact on productivity by regulating the maximum number of students a teacher may educate. The *Agreement between the NSW Department of Education and Communities and the NSW Teachers Federation on the staffing of NSW Public schools 2012–2016*, sets the following class sizes:

- Kindergarten – 20 students
- Year 1 – 22 students
- Year 2 – 24 students
- Year 3 to 6 – no class to exceed 30 students
- Years 7 to 10 – no class to exceed 30 students
- Years 11 to 12 – no class to exceed 24 students.

The Department of Education and Communities advised that there are no proposals to change the current class size policies for primary or secondary school education.

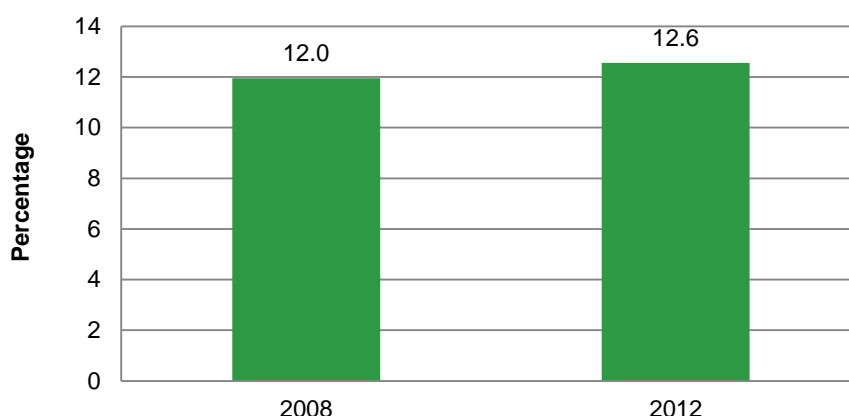
Second, various programs and partnerships aimed at increasing the number of teachers has impacted on productivity and efficiency. These programs include the National Partnership on Literacy and Numeracy, National Partnership on Low Socio-economic Status School Communities, the Priority Schools Program and Priority Action Program.

The intention of these investments is to improve educational outcomes. For example, the Priority Schools Funding Program's focus is to 'improve students' literacy, numeracy and participation outcomes'. However, as shown through our productivity analysis, quality improvements in reading and writing have been negligible for primary school education and trending negatively for secondary school education. Despite recent investments in the education system, physical productivity and efficiency have deteriorated and there has been no or limited improvement in quality.

Raising of the school leaving age and increased retention rates

The Department of Education and Communities advised that raising the school leaving age to 17 years, which came into effect in January 2010, and increased retention rates impacted negatively on efficiency by increasing the average cost to educate a student over his or her academic career. As Exhibit 13 shows, between 2008 and 2012 the proportion of secondary students in Years 11 and 12 compared to all secondary students grew from 12.0 to 12.6 per cent.

Exhibit 13: Proportion of secondary students in Years 11 and 12



Source: Report on Government Services 2014.

The Department of Education and Communities advised that this places upwards pressure on the average cost per student. However, it is difficult to determine the full impact on the marginal cost on student education because of the many of factors influencing average cost.

Examples of factors that influence the average cost of student education include:

- the proportion of senior students versus junior students. The average cost of a senior student is higher than a junior student. Between 2008 and 2012, the proportion of students in senior years has grown (Exhibit 13), placing upward pressure on costs. However, this may be offset by higher growth rates of students in primary school years.
- students who choose to undertake employment or a vocational education and training (VET) course. These courses are funded through TAFE and therefore has a dampening effect on costs incurred by schools. In 2013, 64,031 (41.4 per cent of students) enrolled in government secondary school undertook a VET course.

Wages policies and primary and secondary school education

As stated in the Introduction, productivity is considered in the NSW Government's current wages policy. Under the policy, increases in remuneration or other conditions of employment greater than 2.5 per cent per year can be awarded provided that:

- employee-related costs savings, including those incurred through productivity improvements, are achieved
- these savings fully offset the increased employee-related costs.

The 2011 policy superseded the NSW Government's 2007 wages policy which had a similar aim of limiting total growth in employee expenses to less than 2.5 per cent per year, with any increases above 2.5 per cent tied to negotiated employee-related cost savings and reforms.

After the introduction of the 2007 wages policy, employee expense growth for primary and secondary school staff exceeded 2.5 per cent per year, with teachers receiving wage increases of more than 2.5 per cent. It should be noted that employee expenses relate to primary and secondary schooling staff only not for the entire Department of Education and Communities.

Between 2008–09 and 2010–11, teachers, who account for roughly 54 per cent of total cost, received an average pay rise of four per cent per year. However, wages growth for primary and secondary school staff grew at an average annual growth rate of 2.8 per cent, increasing from \$6.7 billion to \$7.1 billion (see Exhibit 14).

Exhibit 14: Employee expense growth for primary and secondary school staff

	Value
Expenses – 2008-09 (\$ billion)	6.7
Expenses – 2010-11 (\$ billion)	7.1
Expenses – 2012-13 (\$ billion)	7.5
Average annual growth between 2008-09 and 2010-11 (%)	2.8
Average annual growth between 2010-11 and 2012-13 (%)	2.8

Source: Report of Government Services 2014

Note: this includes expenses incurred both in and outside of school.

After the introduction of the 2011 wages policy, employee growth for primary and secondary school staff also exceeded 2.5 per cent with teachers being awarded an average pay rise of 3.2 per cent per annum.

Recommendations

By December 2015, the Department of Education and Communities should:

- investigate better ways to measure the quality of its services
- set productivity and efficiency objectives
- report its productivity trends to Parliament using either the Audit Office's methodology or some other appropriate methodology
- report its efficiency trends to Parliament
- assess and report on the return of additional investments in education such as smaller class sizes.

3. CityRail

In this section, we examined whether Transport for NSW had the ability to track productivity and efficiency trends in CityRail. We also examined whether productivity and efficiency trends were evident and whether the trends were reported to Parliament.

Finding: By using existing data, Transport for NSW had the ability to track CityRail's productivity and efficiency trends. However, there are data limitations which must be understood when interpreting productivity trends.

In 2012–13, Transport for NSW did not report on the productivity of RailCorp (which consisted of CityRail and CountryLink) to Parliament. In the same year, efficiency was presented to Parliament in RailCorp's Annual Report.

For the period 2009–10 to 2012–13, the Audit Office's methodology did not demonstrate a clear productivity trend. However, productivity trends may be evident by using alternative productivity measurement methods.

Available data does, however, demonstrate clear efficiency trends. Between 2009–10 and 2012–13, efficiency trended positively.

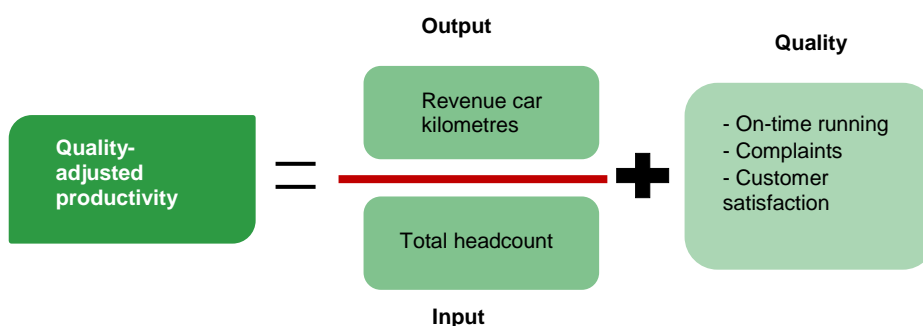
After the introduction of the 2007 wages policy, employee expenses for CityRail exceeded 2.5 per cent per year with staff receiving wage increases of more than 2.5 per cent per year. After the introduction of the 2011 wages policy, CityRail staff received wage increases of more than 2.5 per cent year. However, CityRail's employee expenses growth was less than 2.5 per cent per year.

3.1 Did Transport for NSW have the ability to track the productivity and efficiency of CityRail?

Based on the measures and data provided by Transport for NSW and relevant research, the Audit Office's methodology (the 'compass' method – see Appendix 3) did not show productivity trends but did show efficiency trends. Using an alternative productivity assessment methodology may show productivity trends for the same data.

As discussed in the Introduction, a productivity measurement methodology of intermediate maturity requires an understanding of the inputs and outputs of production and the quality of that production. Exhibit 15 outlines the key indicators which could be used to track productivity in CityRail.

Exhibit 15: Key indicators to track productivity in CityRail



The audit examined the productivity and efficiency of CityRail between 2009–10 and 2012–13. On 1 July 2013, CityRail was disbanded and Sydney Trains came into effect. These machinery of government changes coincided with the 'Fixing the Trains' initiative which brought significant reforms to New South Wales train operations.

To ensure data comparability, we excluded the most recent data pertaining to Sydney Trains and examined productivity trends for CityRail only. Audit findings and recommendations are relevant and transferrable to both entities because:

- the methodology can be applied to any rail operator
- metrics and indicators are common across both entities
- Transport for NSW is the Principal Department for both CityRail and Sydney Trains.

We note that an analysis of more recent data may yield improved results following the ongoing 'Fixing the Trains' initiative.

Output

Two output indicators were considered for the productivity analysis:

- car revenue kilometres – the number of car kilometres delivered that are available for a paying customer
- passenger journeys.

We decided to use car revenue kilometres for the assessment because providing access to train services is the best definition of CityRail's output, whereas passenger journeys are more closely aligned to outcomes.

Quality

Four quality indicators were considered for the productivity analysis:

- customer satisfaction
- customer complaints
- on-time running
- crowding.

Customer satisfaction

In 2011-12, Transport for NSW commissioned independent in-depth field studies to determine the service attributes that are important to public transport customers and assess the extent to which they correlate to customer satisfaction. From this evidence base, nine service elements and 27 service attributes were demonstrated to be core drivers of quality performance and customer satisfaction. A tracking survey was then constructed based on these core drivers to measure satisfaction trends over time. The survey is now conducted on a six-monthly basis and is used to develop the Transport Customer Satisfaction Index.

Customer complaints

Customer complaints are a delicate yet important aspect of customer attitudes toward an organisation, as it can impact areas of post-complaint action, including use and advocacy of the service. CityRail showed a 21 per cent increase in the number of complaints received over the 2009–10 to 2012–13 period. While this is a negative result for CityRail, factors other than poorer performance could have influenced this result. There have been improvements in technology which have enabled enhanced capturing and processing of complaints. Timetable changes are also known to drive customer complaints.

Despite the increase in the number of complaints received, CityRail's customer satisfaction has remained consistently high at 81 per cent since measuring began in 2011. This should be taken into consideration when analysing the complaints and making decisions on future improvements to service delivery.

On-time running

On-time running is a quality indicator that CityRail has greater control of. On-time running is defined as services arriving within five minutes of their scheduled time at Central station for suburban services and six minutes for InterCity services. On-time running is measured during the morning and afternoon peaks taking into account 'force majeure' events (events outside the control of CityRail, for example, lightening striking signalling equipment). Between 2009–10 and 2012–13 on-time running had a negative trend, declining by 2.18 per cent.

Crowding

Crowding could also be considered a quality indicator but was not used due to its relationship with asset utilisation. Increased crowding could be viewed as a decrease in customer comfort, however, crowding also represents improved utilisation of the asset.

Final selection of quality indicators

Transport for NSW advised that customer complaints and on-time running should not be used as an overall indicator of service quality, and that customer satisfaction should be the primary measure of service quality, as it is the most complete indicator. We do not agree with this approach for two reasons:

- service quality has many dimensions and thus overall quality would be better determined through a suite of indicators rather a solitary one. This approach is consistent with research and the Independent Pricing and Regulatory Tribunal's (IPART) approach
- customer satisfaction is not solely based on the objective conditions of the transport system. It is also susceptible to perception, so high levels of satisfaction may not necessarily indicate a 'better' system. Instead, satisfaction scores should be interpreted in their wider context.

As such, customer satisfaction, complaints and on-time running were all used to determine overall quality.

Efficiency

Two efficiency indicators were considered:

- cost per car revenue kilometre
- cost per passenger journey.

Cost per car revenue kilometre was considered the best efficiency indicator because:

- cost per car passenger journey is more aligned to cost-effectiveness rather than efficiency
- the Rail Services Contract between Transport for NSW and Sydney Trains sets net operating cost per revenue car kilometre as a key performance indicator
- the indicator overcomes variations in access and equity service standards over time. For example, adding a service that very few people use would most likely result in a higher cost per passenger journey for that service and for the rail network overall.

However, cost-effectiveness (cost per passenger journey) is also a crucial performance indicator and has been presented along with the efficiency indicator.

3.2 Did Transport for NSW report on the productivity and efficiency of RailCorp (consisting of CityRail and CountryLink) to Parliament?

The reports to Parliament that we examined included:

- annual reports
- NSW 2021 Performance Report
- Budget papers
- NSW Bureau of Transport Statistics publications.

It should be noted that RailCorp, which consisted of CityRail and CountryLink, was the legal entity to be reported on.

In 2012–13, Transport for NSW did not report on the productivity of RailCorp (CityRail and CountryLink) to Parliament. RailCorp's annual report did report on physical output, input and quality indicators which, with further analysis, could be used to report on productivity.

In the 2012–13 and prior annual reports, Transport for NSW (RailCorp) did report to Parliament on its cost-effectiveness (cost per passenger journey). It did not report on RailCorp's (CityRail and CountryLink) cost per car kilometres. By reporting on its cost-effectiveness, Transport for NSW met its legislative requirements under the Annual Reports (Departments) Regulation 2010 which requires that qualitative and quantitative measures and indicators of performance showing the level of efficiency be reported where practicable.

3.3 Did the available data demonstrate productivity and efficiency trends?

Using our methodology, available data did not demonstrate productivity trends, but did demonstrate efficiency trends. Using an alternative methodology may demonstrate productivity trends for the same data.

In summary, the data showed:

- physical productivity – defined as revenue car kilometres per headcount (of CityRail), improved by 5.37 per cent over the 2009–10 to 2012–13 period. This was the result of a steady increase in the volume of services and car revenue kilometres and a reduction in headcount, particularly back office staff
- the quality of CityRail outputs declined over the 2009–10 to 2012–13 period because there was:
 - a reduction in on-time running by 2.18 per cent
 - an increase in complaints by 21.04 per cent
 - stable customer satisfaction.

Given that improving physical productivity was associated with declining quality, a quality-adjusted productivity trend could not be ascertained. The detailed assessment can be found in Appendix 7.

Over the same period, efficiency trended positively. In 2012–13, real cost per car revenue kilometre was \$8.84 compared to \$9.31 in 2009–10. This equates to an efficiency improvement of five per cent.

Despite this efficiency improvement, CityRail's cost-effectiveness trended negatively. In 2012–13, the real cost per passenger journey was \$13.08 compared to \$10.84 in 2009–10.

Other research into CityRail's productivity, efficiency and cost-effectiveness

Productivity – methodologies of intermediate maturity

Research using alternative methodologies has identified productivity trends in CityRail. Deloitte Access Economics found that between 2010–11 and 2011–12, CityRail's productivity declined by 1.3 per cent. This analysis used the following outputs to derive an index of output over time:

- CityRail services passenger journeys
- on-time running
- value to passengers.

Productivity – methodologies of advanced maturity

Research also indicates that more advanced methodologies of productivity measurement can identify trends. As discussed in the Introduction, a highly mature methodology is one where consumer preference adjustments are made. The rail industry has well developed tools to determine consumer values which could be used to measure productivity.

For example, a 2007 study into the value of CityRail calculated the costs to CityRail passengers from moving to alternative transport modes in the hypothetical scenario that CityRail did not exist. This cost was then used to derive the value of CityRail to the community. Between 1997–98 and 2006–07, CityRail's value to the community per dollar spent declined from \$3.40 to \$1.80. Although CityRail was still a valuable service in 2006–07 (\$1.80 of value for every dollar spent), its productivity had been declining over time.

Efficiency and cost-effectiveness

Research has also demonstrated the ability to identify efficiency trends.

A 2013 paper presented to the Australasian Transport Research Forum by Patrick Tsai and Corinne Mulley from the Institute of Transport and Logistic Studies at the University of Sydney benchmarked CityRail's operating cost per car kilometre and operating cost per passenger against systems in other countries. The data were collected from publicly available financial reports or annual reports between 2009 and 2011. The report notes that although networks of varying sizes are compared, the results are still valid because the ratio of outputs to inputs is of interest rather than absolute values. For example, Sydney operates a larger network so is expected to generate more outputs in terms of car kilometres operated. However, this will likely require a greater number of inputs.

Between 2009 and 2011, the report found that the operating cost per car kilometre for CityRail increased from approximately \$8 to \$9. The report noted that Sydney had good efficiency in terms of operating cost per car kilometre – comparable to London and Montreal.

Over the same period operating cost per passenger also increased from approximately \$8 to \$9. The study noted that CityRail had the highest operating cost per passenger when compared to other networks. However, this was largely due to factors such as land use, population density and fares.

Wages policies and CityRail

As stated in the Introduction, productivity is considered in the NSW Government's current wages policy. Under the policy, increases in remuneration or other conditions of employment of more than 2.5 per cent per year can be awarded provided that:

- employee-related costs savings, including those incurred through productivity improvements, are achieved
- these savings fully offset the increased employee-related costs.

The 2011 policy superseded the NSW Government's 2007 wages policy which had a similar aim of limiting total growth in employee expenses to less than 2.5 per cent per year, with any increases above 2.5 per cent tied to negotiated employee-related cost savings and reforms.

After the introduction of the 2007 wages policy, employee expenses for RailCorp (CityRail and CountryLink staff) staff exceeded 2.5 per cent with its staff receiving wage increases of more than 2.5 per cent. Between 2008–09 and 2010–11, RailCorp staff received average pay increases of 4.0 per cent per year. In 2010–11, employee expenses equated to \$1.43 billion compared to \$1.31 billion in 2008–09. This equates to an increase in total employee expenses of 4.5 per cent per year on average.

After the introduction of the 2011 wages policy, staff received wage increases of more than 2.5 per cent, but employee expenses for RailCorp staff did not exceed 2.5 per cent per year. Between 2010–11 and 2012–13 RailCorp staff received average pay increases of 3.7 per cent per year. Over the same period, total employee expenses for RailCorp declined by 2.7 per cent per year on average. Total employee expenses declined from \$1.43 billion in 2010–11 to \$1.25 billion in 2012–13.

Recommendations

By December 2015, Transport for NSW should:

- ensure Sydney Trains:
 - sets productivity and efficiency objectives
 - reports its productivity trends to Parliament (through its annual report for example) using the Audit Office's methodology or another appropriate methodology
 - continues to report its cost-effectiveness (cost per passenger journey) to Parliament
 - reports on real cost per revenue car kilometres to Parliament
- for other transport operators:
 - report on productivity trends to Parliament using the Audit Office's methodology or another appropriate methodology
 - report on efficiency trends to Parliament using appropriate efficiency metrics, if not already doing so.

4. NSW Police Force

In this section, we examined whether the NSW Police Force had the ability to track its productivity and efficiency trends. We also examined whether productivity and efficiency trends were evident and whether the trends were reported to Parliament.

Finding: By using existing data, the NSW Police Force (the Force) has the ability to track its productivity and efficiency trends. However, there are data limitations which must be understood when interpreting trends.

Over the period in review, 2008–09 to 2012–13, the Force did not report on the productivity or efficiency of its activities to Parliament. Productivity and efficiency indicators are available in the Report on Government Services, however, this is not tabled in Parliament.

Available data demonstrates that productivity and efficiency trends are identifiable in the Force. For the period 2008–09 to 2012–13 productivity trended positively and efficiency trended negatively.

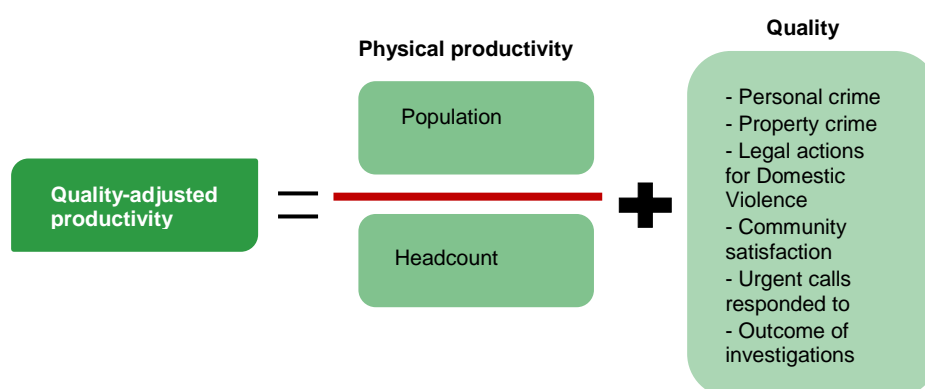
The wages policies did not cover sworn police officers. Between 2008–09 and 2010–11, employee expense growth for the Force exceeded 2.5 per cent per year. Between 2010–11 and 2012–13 employee expenses growth was less than 2.5 per cent per year.

4.1 Does the NSW Police Force have the ability to track its productivity and efficiency?

The Force reports on sufficient indicators to track productivity and efficiency trends. There are limitations that must be taken into consideration, however, when analysing some indicators and incident rates.

As discussed in the Introduction, a productivity measurement methodology of intermediate maturity requires an understanding of the inputs and outputs of production and the quality of that production. Exhibit 16 outlines the key indicators which could be used to track productivity trends.

Exhibit 16: Key indicators to track productivity in the Force



Outputs and inputs

Conventional methods of measuring productivity can be difficult to apply to the Force because of the unique nature of the output measure. For example, achieving the goal of reduced crime, and maintaining this, might make it appear as though productivity has reduced due to a greater number of staff per incident of crime. This is further complicated by the greater effort devoted to proactive policing – which is aimed at preventing crime in the first instance – due to the difficulty of measuring crime prevented or avoided.

Due to the uniqueness of the services provided by the Force, the physical productivity measure has been defined as the number of people that are being served (the population of New South Wales) per headcount of the Force.

Staff (both sworn and unsworn officers) are the key labour inputs to the delivery of policing services in New South Wales, accounting for roughly 80 per cent of total expenses.

Quality

Identifying appropriate quality indicators for the Force is complex due to the variety of services that the Force is required to provide. As such, selecting a few indicators to make a judgement on performance against the entire spectrum of policing activities may not give a true reflection of overall performance.

A further challenge in assessing quality is that the reported incidents and actual rate of incidents often do not match exactly and vary over time. Domestic violence and sexual assault have historically been underreported. However, evidence suggests that reporting rates for these crimes are increasing due to:

- more effective reporting avenues
- improved victim awareness and reductions in 'anticipated severe personal costs (for example, loss of contact with family members, fear for their own safety and well-being, public identification and stigmatisation) that victims have traditionally faced when reporting such incidents'.

An increasing number of incidents recorded therefore may not necessarily reflect a poorer quality of police services. Conversely, reporting for other crime types such as 'incidents of personal crime' and 'incidents of property crime' is more closely aligned to the actual rate of crime. These statistics are therefore more likely to be reliable.

A key quality indicator that is not reported in the Force's annual reports but is reported in the Report on Government Services is finalised investigations within 30 days. This indicator is important because it shows how timely the Force has been in finalising crime and is an example of an activity that the Force has greater influence over.

Efficiency

Similar to productivity, the best efficiency measure available is one which accounts for recurrent expenditure per head of New South Wales population.

4.2 Is the NSW Police Force reporting on the productivity and efficiency of its activities to Parliament?

The reports to Parliament we examined included:

- annual reports
- NSW 2021 Performance Report
- Budget papers
- NSW Bureau of Crime Statistics and Research publications.

Between 2008–09 to 2012–13, the Force's annual reports did not report its productivity or efficiency to Parliament.

The productivity (police staff per New South Wales population) and efficiency (net recurrent expenditure per person of the New South Wales population) of the Force is reported by the Report on Government Services. However, this report is not tabled in NSW Parliament.

The Annual Reports (Departments) Regulation 2010 requires that qualitative and quantitative measures and indicators of performance showing the level of efficiency be reported where practicable. The Report on Government Services has shown it to be practicable to report on efficiency. Hence, similar reporting by the Force would also be practicable.

4.3 Does the available data demonstrate productivity and efficiency trends?

Available data does demonstrate productivity and efficiency trends.

We applied the Audit Office's methodology (the 'compass' method – see Appendix 3) to determine the quality-adjusted productivity of the Force. To perform this analysis, we relied largely on data provided from the Force's performance measurement system. Most of the quality indicators and supporting statistics can also be found in the Force's annual reports.

For the period 2008–09 to 2012–13, quality-adjusted productivity for the Force trended positively driven by improvements in labour productivity and quality.

In summary:

- physical productivity, the average number of police staff per person (of New South Wales population) improved. Over the period, total staff (as measured by headcount) grew by 3.08 per cent while the NSW population grew by 5.04 per cent.
- the quality of the NSW Police Force's outputs showed overall improvements:
 - incident rates for crimes decreased year on year
 - public safety improved spurred on by both improvements to perceptions of personal safety and road safety
 - community satisfaction improved and complaints per officer declined.

The detailed assessment can be found in Appendix 8.

Efficiency did not show the same improvement over the period and trended negatively. In 2012–13, the average real recurrent expenditure per person (of the NSW population) was \$412 compared to \$387 in 2008–09. This equates to an increase in real growth of 6.48 per cent over the period.

The Force's Death and Disability Scheme had a substantial negative impact on efficiency trends. When death and disability payments are removed, the resulting change in all other real cost results in a positive efficiency trend. The Death and Disability Scheme was replaced with the new Police Blue Ribbon Insurance (PBRI) scheme in January 2012. As reported in our Financial Audit Volume Eight 2014, the cost of the scheme for the year ended 30 June 2014 was 8.3 per cent of total police officers' remuneration. The Force's overall efficiency should improve as the cost of the scheme reduces to its statutory target of 4.6 per cent.

Wages policies and the NSW Police Force

As stated in the Introduction, productivity is considered in the NSW Government's current wages policy. Under the policy, increases in remuneration or other conditions of employment above 2.5 per cent per year can be awarded provided that:

- employee-related costs savings, including those incurred through productivity improvements, are achieved
- these savings fully offset the increased employee-related costs.

The 2011 policy superseded the NSW Government's 2007 wages policy which had a similar aim of limiting total growth in employee expenses to less than 2.5 per cent per year, with any increases above 2.5 per cent tied to negotiated employee-related cost savings and reforms.

It should be noted that the wages policies did not cover sworn police officers.

Between 2008–09 and 2010–11, sworn police officers received average pay rises of four per cent per year. Employee expenses for the Force grew at nine per cent per year. In 2010–11, employee expenses equated to \$2.4 billion compared to \$2.0 billion in 2008–09. The Force advised that a significant proportion of this growth can be attributed to volatility in its Death and Disability scheme.

Between 2010–11 and 2012–13, sworn police officers received an average pay rise of a 3.6 per cent. Over this period, total employee expense growth was 2.4 per cent per year on average. This slowing in employee expenses growth can be largely attributed to the slowing growth in the Force's Death and Disability Scheme. Between 2010–11 and 2012–13 superannuation and Death and Disability expenses grew from \$620,266 to \$643,750, or by an average of 1.9 per cent per annum.

Recommendations

By December 2015, the NSW Police Force should:

- set productivity and efficiency objectives
- investigate better ways to measure the output of policing activities including proactive policing activities
- reports its productivity trends to Parliament (through its annual report for example) using the Audit Office's methodology or another appropriate methodology
- report its efficiency trends to Parliament.

5. NSW Local Court

In this section, we examined whether the Department of Justice had the ability to track productivity and efficiency trends in the NSW Local Court. We also examined whether productivity and efficiency trends were evident and whether the trends were reported to Parliament.

Finding: The Department of Justice has the ability to track basic productivity and efficiency trends in the NSW Local Court. The Department does not have the ability to perform a more detailed assessment due to the absence of reliable data and metrics to comprehensively understand the NSW Local Court’s inputs, outputs and quality.

In 2012–13, the Department of Justice did not report on the productivity of the NSW Local Court to Parliament. In the same year, the Department’s annual report reported the efficiency (net expenditure per finalisation) of all courts, including the NSW Local Court, to Parliament. It did not, however, report efficiency over time.

Available data demonstrates basic productivity and efficiency trends but not in a consistent way over the entire period. Between 2008–09 and 2010–11, productivity and efficiency were trending negatively. Following a change in counting systems, productivity and efficiency trended positively between 2011–12 and 2013–14.

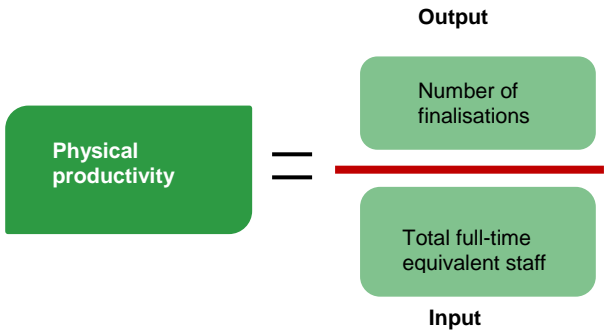
After the introduction of both the 2007 and 2011 wages policies, employee expense growth for the NSW Local Court was less than 2.5 per cent per year.

5.1 Does the Department of Justice have the ability to track productivity and efficiency in the NSW Local Court?

The Department of Justice has the ability to track basic productivity and efficiency trends in the NSW Local Court. The department does not have the ability to perform a more detailed assessment due to the absence of reliable data and metrics to comprehensively understand the NSW Local Court’s inputs, outputs and quality.

As discussed in the Introduction, a productivity measurement methodology of intermediate maturity requires an understanding of the inputs and outputs of production and the quality of that production. The Department of Justice does not have sufficient understanding of the entire outputs produced by the NSW Local Court because reliable and accessible data is only available for finalisations (the number of criminal and civil matters completed) and not for other matters. Further, the department captures a limited number of indicators that could be used to understand the quality of the NSW Local Court. As such, productivity can only be tracked at a basic level using finalisations as outputs and with no quality adjustment (see Exhibit 17).

Exhibit 17: Key indicators to track basic productivity in the NSW Local Court



Inputs

Labour inputs have been defined as total FTE staff including judicial officers, judicial support staff, court registry staff, court security and sheriff staff. We have used total staff, and not solely judicial officers, because we examined the entirety of NSW Local Court operations.

Outputs

Output has been defined as the number of cases finalised. The Department advised that there are a number of complexities which must be considered when using finalisations as an output.

The first is that finalisations do not account for other types of work performed by the NSW Local Court, including:

- 'Special Jurisdiction' matters of the Local Court (s9b of the *Local Court Act 2007*), including:
 - forensic procedure applications
 - dividing fences
 - noise abatement
 - licence appeals
 - strata applications
- matters within the Industrial Jurisdiction
- NSW Local Court Magistrates dealing with the Children's Court Criminal and Care Jurisdictions in regional New South Wales
- NSW Local Court Magistrates dealing with coronial matters for regional New South Wales
- administrative matters such as breach of bond, breach of Community Service Orders, reviews of search warrant applications, Commonwealth search warrants
- interlocutory applications, for example, return of subpoena arguments.

Second, finalisations are counted 'by person' which means a defendant with one offence is counted the same as a defendant with a number of offences. There may also be significant differences in the time needed to determine each of those matters.

Third, finalisations in civil matters may not utilise the time of a judicial officer. For example, matters may be settled out of court with the involvement of a registrar.

Two alternative solutions to using finalisations are as follows:

- Break-down total staff time required for finalisations only. In doing so, a productivity assessment can be developed for finalisations only rather than all matters in the NSW Local Court system.
- Broaden the definition of output from finalisations to all matters heard in the NSW Local Court. Using this method, a broader scope of work may be aggregated to give a better representation of total output. This approach has been proven to be possible in other agencies such as NSW Health which uses National Weighted Activity Units (NWAUs) to aggregate diverse outputs.

Both alternative solutions were hampered by a lack of accessible and reliable data. The Department of Justice was not able to provide a breakdown of how staff time is allocated or the number of matters brought before the NSW Local Court. As such, finalisations were deemed the most useful definition of output, despite the shortcomings noted above.

The lack of accessible and reliable data regarding the NSW Local Court's output is a concern. An assessment of NSW Local Court publications shows that statistics relating to the following matters are published:

- finalisations (both criminal and civil)
- apprehended violence orders

- timeliness
- diversionary referrals.

An examination of annual reports in other jurisdictions shows a more comprehensive reporting regime of local court outputs. Exhibit 18 gives the example of Victoria's reporting.

Exhibit 18: Reporting of matters in Magistrates' Court of Victoria's Annual Report

The Magistrates' Court of Victoria publishes a number of statistics relating to caseloads in its Annual Report. These statistics include:

- cases initiated
- cases finalised
- applications by type, for example, licence restorations, interlock removals
- breaches of sentencing orders
- committal and appeals
- no appearances by accused
- listings.

These statistics provide a comprehensive picture of the types and number of matters dealt with by the court and allows a greater understanding of the full workload of the Magistrates' Court.

Source: Magistrates' Court of Victoria 2013–14 Annual Report, pp. 91–95

Without a proper understanding of the number and types of matters dealt with by the NSW Local Court, it is impossible to evaluate the performance of judges and court staff. The Department of Justice relies on the Report on Government Services for performance information. However, this information is inadequate for detailed analysis of performance, including productivity, because it only reports on finalisations. The report makes a number of simplifications and adjustments to allow inter-jurisdictional comparisons, which makes it less useful for a detailed analysis.

Quality

Few indicators are used to measure quality in the NSW Local Court. The Department of Justice advised that quality indicators have been discussed previously by the Steering Committee for the Review of Government Service Provision but have yet to be agreed. Quality indicators considered for productivity assessment included:

- Time standards – time standards give an expectation of when cases should be finalised by. For example, 95 per cent of summary criminal trials should be finalised within six months. The Department of Justice advised that time standards are defined by the Report on Government Services as an effectiveness indicator and not a quality indicator.
- Customer satisfaction surveys – customer satisfaction surveys are often used to gauge a person's experience and satisfaction with the service offered. Surveys within a court setting are problematic because they are heavily influenced by the outcomes of proceedings, for example, a person sentenced to prison will likely report a lower satisfaction rating.
- Percentage of successfully appealed cases – this gives an indication of the correctness of a judgement made by a judicial officer, so a low success rate of appeals to higher courts reflects a greater accuracy of judgements. The Department of Justice advised that this measure is problematic because it is susceptible to factors other than the quality of judicial decision making. For example, those found guilty may appeal to higher courts seeking sentence leniency rather than seeking a decision to be overturned.
- Mystery shopper surveys – the Department of Justice conducts periodic mystery shopping surveys to determine whether client service delivery is meeting client service charter expectations.

- Data quality – this indicator measures the accuracy of data entered into the Department of Justice’s case management system (JusticeLink). The Bureau of Crime Statistics and Research regularly audits and reports on the quality of data it receives from the NSW Local Court. Between 2009–10 and 2012–13 the error rate in the NSW Local Court has been improving.

No quality adjustment was made for the productivity assessment, therefore, quality is assumed to be constant over time for the following reasons:

- Information on mystery shopper surveys and data quality did not cover the entire assessment period
- Although mystery shopper surveys or data quality are indicators of quality we did not consider them to be sufficient to assess overall productivity due to their focus on process rather than outcomes.

The limited number of quality indicators in the NSW Local Court is of concern. Without indicators, the quality of judicial decisions and court processes is unknown. The Department of Justice advised that its current program to apply the International Framework for Court Excellence may develop a more accurate suite of quality indicators. Exhibit 19 provides an overview of the International Framework for Court Excellence.

Exhibit 19: International framework for court excellence – global measures of court performance

The International Framework for Court Excellence (IFCE) is a quality management system designed to help courts improve their performance. It has developed draft global measures of court performance which describes focused, clear, and actionable core court performance measures aligned with the values and areas of court excellence of the IFCE. These measures include:

- court user satisfaction – the percentage of court users who believe that the court provides procedural justice
- on-time case processing – the percentage of cases resolved or otherwise finalised within established timeframes
- case backlog – percentage of cases in the court system longer than established timeframes
- trial date certainty – the proportion of important case processing events that are held when first scheduled.

Source: International Framework for Court Excellence <www.courtexcellence.com>

Efficiency

The NSW Local Court has data to measure its efficiency (see Exhibit 20).

Exhibit 20: Key efficiency indicators

Measure	Source
Real net recurrent expenditure per finalisation, criminal	ROGS
Real net recurrent expenditure per finalisation, civil	ROGS
Real recurrent expenditure per finalisation, criminal	ROGS
Real recurrent expenditure per finalisation, civil	ROGS
Local court net expenditure (\$) per finalisation, criminal and civil	Annual Report 2012/13

5.2 Is the Department of Justice reporting on the productivity and efficiency of the NSW Local Court to Parliament?

The reports to Parliament we examined included:

- annual reports
- NSW 2021 Performance Report
- Budget papers
- NSW Local Court annual reviews.

In 2012–13, the Department of Justice did not report to Parliament, in any of the reports listed above, the productivity of the NSW Local Court.

In 2012–13, the Department of Justice's Annual Report presented to Parliament the efficiency (net expenditure per finalisation) of all its courts, including the NSW Local Court. Its annual report included the NSW Local Court's efficiency against the Australian average as reported by the Report on Government Services. It did not, however, report efficiency over time. This met the Annual Reports (Departments) Regulation 2010 requirement for qualitative and quantitative measures and indicators of performance showing the level of efficiency be reported where practicable.

5.3 Does the available data demonstrate productivity and efficiency trends?

Available data does demonstrate basic productivity and efficiency trends. We applied the Audit Office's methodology (the 'compass' method – see Appendix 3) to determine the productivity of the NSW Local Court.

As discussed below, a productivity trend could not be established for the entire 2008–09 to 2013–14 period due to changes in counting methods for finalisations. Productivity trends could be identified for subsets of the period. Between 2008–09 and 2010–11 total staff productivity for the NSW Local Court trended negatively because the number of finalisations per FTE staff declined from 317 to 313. After the change in counting methods, productivity trended positively from 284 finalisations per FTE staff in 2011–12 to 287 in 2013–14.

The detailed assessment can be found in Appendix 9.

For similar reasons, an efficiency trend also could not be established for the entire period, but could be identified for subsets of the period. Between 2008–09 and 2010–11 efficiency trended negatively, increasing from \$369 per finalisation to \$406 per finalisation. After the change in counting methods, efficiency trended positively, falling from \$532 per finalisation to \$469.

Data limitations and contextual factors

The Department of Justice advised that a simple productivity analysis of this type using Report on Government Services data has a number of limitations and may lead to incorrect conclusions.

The first limitation relates to the inconsistency of data over time. Data extraction and collation processes have undergone refinement over the assessment period. This has occurred particularly since the implementation of JusticeLink, which replaced a former case management system from which Report on Government Services data was estimated.

The second shortfall relates to contextual factors which should be considered when interpreting results. These factors include:

- delays caused while awaiting forensic evidence
- delays caused by counsel (defence and prosecutions) being unable to proceed as originally scheduled
- delays with pre-sentence reports from Corrective Services NSW
- a change in the case types addressed by the NSW Local Court. Over the last few years there has been a reduction in the amount of civil matters – around nine per cent – being

heard and an increase in the crime workload (five per cent). For the most part, crime cases are more complicated than civil cases

- matters heard in regional areas have mostly decreased over the last few years but the effort of sending judicial officers to ensure citizens have access to justice means there are less cases per magistrate in those locations.

The Department of Justice advised that given these complexities a more detailed assessment is required to produce meaningful conclusions. We were unable to perform a more detailed assessment due to the lack of accessible and reliable data and hence were required to rely on Report on Government Services data.

The Department of Justice advised that their focus is around case management and the scheduling of matters for resolution rather than the collation of performance data. However, an understanding of these issues is key to productivity and performance improvement.

Wages policies and the NSW Local Court

As stated in the Introduction, productivity is considered in the NSW Government's current wages policy. Under the policy, increases in remuneration or other conditions of employment of more than 2.5 per cent per year can be awarded provided that:

- employee-related costs savings, including those incurred through productivity improvements, are achieved
- these savings fully offset the increased employee-related costs.

The 2011 policy superseded the NSW Government's 2007 wages policy which had a similar aim of limiting total growth in employee expenses to less than 2.5 per cent per year, with any increases above 2.5 per cent tied to negotiated employee-related cost savings and reforms.

After the introduction of the 2007 wages policy, employee expense growth for the NSW Local Court was less than 2.5 per cent. Total employee expenses in 2010–11 for the NSW Local Court were \$105.9 million compared to \$103.4 million in 2008–09. This equates to an average increase in employee expenses of 1.2 per cent per year. It is notable that judicial officers' expenses (which accounted for 36 per cent of total salaries in 2012–13) grew at an average of 3.7 per cent per year.

After the introduction of the 2011 wages policy, employee expense growth for the NSW Local Court was less than 2.5 per cent. Total employee expenses in 2012–13 for the NSW Local Court were \$108 million compared to \$105.9 million in 2010–11. This equates to an average growth rate of 1.0 per cent per year, significantly less than 2.5 per cent. It is notable that judicial officers' expenses grew at an average of 2.8 per cent per year over this period.

Recommendations

By March 2016, the Department of Justice should:

- set productivity and efficiency objectives
- improve the accessibility and reliability of data relating to the types and number of matters dealt with in the NSW Local Court and the staff effort involved in these matters
- utilise the International Framework for Court Excellence, or other suitable framework, to set quality indicators
- report its productivity trend to Parliament (through its annual report for example) using the Audit Office's methodology or another appropriate methodology
- continue to report its efficiency to Parliament, including trends over time.

Appendices

Appendix 1: Responses from agencies

NSW Health



S15/342

Mr Tony Whitfield
Acting Auditor-General
Audit Office of NSW
GPO Box 12
SYDNEY NSW 2001

Dear Mr Whitfield

Re: Performance Audit – Identifying productivity in the public sector

Thank you for providing me with a copy of the final report for the above performance audit.

Please find attached a formal response from NSW Health to be incorporated into the published report.

I understand your intention is to table the report in Parliament on 16 July 2015.

I would like to thank you and your team for working with the Ministry of Health to make this audit a worthwhile and constructive exercise.

Yours sincerely

A handwritten signature in black ink, appearing to read "Mary Foley".

Dr Mary Foley
Secretary, NSW Health

3 JULY 2015

NSW Ministry of Health
ABN 92 097 899 630
73 Miller St North Sydney NSW 2060
Locked Mail Bag 961 North Sydney NSW 2058
Tel: (02) 9391 9000 Fax: (02) 9391 9101
Website: www.health.nsw.gov.au

Response from NSW Health

NSW Health welcomes the Auditor-General's findings of improved productivity of acute inpatient care over the audit period as well as an improving efficiency trend since the introduction of the national Activity Based Funding (ABF) system. The Auditor-General's report highlights the sophisticated suite of tools NSW Health employs to measure and report on efficiency and productivity.

NSW Health accepts all the recommendations relating to NSW Health, and notes that the audit focussed on productivity and efficiency for acute admitted care. In developing an appropriate productivity methodology, it will be necessary to consider how best to account for the broader set of NSW Health services. The profile of these services is changing in line with the global shift in disease burden, from diseases requiring episodic care to chronic and complex conditions that require a range of hospital and community-based services over time.

The following table outlines specific responses to each of the recommendations.

Recommendation	NSW Health response	Comment
By December 2015, NSW Health should:		
1. Report its real cost per NWAU to Parliament (either through a NSW Health report or through a Bureau of Health Information report)	Accepted	NSW Health will consider whether the Annual Report is an appropriate vehicle for this reporting.
2. Set productivity and efficiency objectives	Accepted	NSW Health already sets extensive service performance targets which have productivity and efficiency dimensions. NSW Health will consider how to further refine the ways productivity and efficiency is captured.
3. Report its productivity trends to Parliament using either the Audit Office's methodology or another appropriate methodology	Accepted	NSW Health will consider whether the Annual Report is an appropriate vehicle for this reporting. NSW Health will undertake further work to develop appropriate methodologies for health services.
4. Report its efficiency trends to Parliament	Accepted	NSW Health already reports efficiency trends. NSW Health will consider how to further refine reporting on efficiency trends.
	<i>NSW Health will consider the above accepted obligations for annual reporting to Parliament in respect of performance in the 2015-16 financial year.</i>	

Dr Mary Foley
Secretary, NSW Health
3 July 2015

Department of Education and Communities



DEPUTY SECRETARY
CORPORATE SERVICES

Mr Tony Whitfield
A/Auditor-General
GPO Box 12
SYDNEY NSW 2001

DGL15/617

Dear Mr Whitfield

I write in response to the letter of 5 June 2015 from Mr Grant Hehir, Auditor-General to Dr Michele Bruniges AM, Secretary, Department of Education, regarding the Audit Office's final report on Performance Audit - Identifying Productivity in the Public Sector.

I would like to thank the Audit Office review team for their work and acknowledge that much of the feedback the Department of Education has provided to your office has been considered in the formulation of your final report.

The Department supports and welcomes the recommendation to pursue guidance from NSW Treasury on the ongoing measurement and reporting of agency productivity and efficiency. We will reconsider our productivity and efficiency objectives once this guidance is available.

The Department has developed a sophisticated value-added methodology to help measure the effectiveness of schooling in improving the learning performance outcomes of students. Value-added measures take into account the context of the school and its students in assessing the contribution the school has made to student achievement.

The Department agrees to report the same efficiency trends that it currently reports in the Report on Government Services in its next Annual Report, noting that unlike other agencies, the Department's annual report is based on a calendar, rather than financial year. We do not propose to prepare a special report for Parliament by December 2015, but the information will be included in the Department's next annual report (for calendar year 2015) which will be tabled in Parliament in May 2016.

The Department notes the recommendation made in relation to assessing and reporting on the return of additional investments in education such as smaller class sizes. The Class Size Reduction program was comprehensively evaluated when it was implemented 2004-07 and we do not propose to undertake a further evaluation.

NSW DEPARTMENT OF EDUCATION

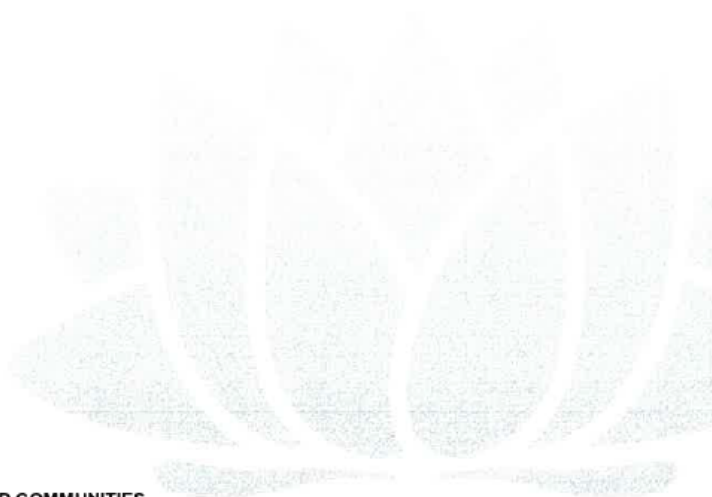
35 Bridge Street Sydney NSW 2000 GPO Box 33 Sydney NSW 2001 T 02 9561 8007 F 02 9561 1079
www.det.nsw.edu.au

The Department is, however, making a significant investment in the evaluation of major programs and initiatives to better measure the quality and effectiveness of investments in education. Our approach is aligned to the NSW Government Evaluation Framework, and covers the major reforms in schooling and early childhood education and care. Reports on these evaluations will be published.

Yours sincerely



Peter Riordan
Deputy Secretary, Corporate Services
3 July 2015



NSW DEPARTMENT OF EDUCATION AND COMMUNITIES

35 Bridge Street Sydney NSW 2000 GPO Box 33 Sydney NSW 2001 T 02 9561 8007 F 02 9561 1079

www.det.nsw.edu.au

Transport for NSW



SO15/10446
PR15/11368

Mr A T Whitfield PSM
Acting Auditor-General
Audit Office of NSW
Level 15, 1 Margaret Street
SYDNEY NSW 2001

Dear Mr Whitfield

Performance Audit: Identifying productivity in the public sector

I refer to your letter dated 5 June 2015 enclosing the final report on the recent performance audit identifying productivity in the public sector. I note that the audit has reviewed the past performance of CityRail between 2009-2013.

Since May 2012, Transport for NSW (TfNSW) and the rail operators have made significant reforms as part of the NSW Government's "Fixing the Trains" initiative. These reforms have included the establishment of two new operators (Sydney Trains and NSW TrainLink) on 1 July 2013; the introduction of a new timetable which resulted in the provision of an extra 1000 weekly services and 600 new express services; and the ongoing upgrade and expansion of track, station and rolling stock infrastructure.

The ongoing success of these reforms has been reflected by a sustained increase in customer satisfaction, with the Customer Satisfaction Index increasing by 7 percentage points between the end of the audit review period and November 2014. As part of the Index, more than 3,000 customers are asked their views on the performance of the network. TfNSW will continue this work to monitor and report on the performance of these services.

I thank you for the opportunity to provide comment on the report.

Yours sincerely

A handwritten signature in blue ink, appearing to read "TR", is written over a faint circular stamp.

Tim Reardon
Secretary

2 JUL 2015

18 Lee Street Chippendale NSW 2008
PO Box K659 Haymarket NSW 1240
T 8202 2200 F 8202 2209
www.transport.nsw.gov.au
ABN 18 804 239 602

NSW Police Force



NSW Police Force

15 July, 2015

D/2015/304180

Mr A T Whitfield PSM
Acting Auditor General
Audit Office of New South Wales
GPO Box 12
Sydney NSW 2001

Dear Mr Whitfield,

Thank you for the opportunity to comment on your final report *Performance Audit – identifying productivity in the public sector*. I note your recommendations and recognise that they reflect the outcome of a number of workshop discussions with officers from the Financial Services and Performance Improvement and Planning Commands.

Given that your report seeks to address productivity measurement across the public sector, I do wish to draw to your attention specific comments made by A/Commissioner Burn in response to your draft report (letter to Ms Katharina Lo, Assistant Auditor General on 14 January 2015) that the productivity and efficiency measures used do not properly acknowledge the basis on which the NSW Police Force is funded nor always what the NSW Police Force is expected to do. In response you have noted in your report "the uniqueness of services provided by the Force" and the significant commitment of staff to the NSW Police Force cost base.

It should be noted that NSW Police Force funding and authorised strength levels are determined in accordance with Government priorities and movement in both metrics may, as a result, be beyond the control of NSW Police Force Executive Management. The measurement of productivity using police numbers and population changes (adjusted for quality) is a raw indicator that may show adverse results as Government funds new policing initiatives over time.

Like many agencies across the public sector, the NSW Police Force is working with the NSW Treasury Resource Management Information (RMI) Project Team, under the NSW Government Financial Management Transformation (FMT) Program to develop revised program structures to be used in funding allocations from the 2017-18 budget year. The RMI Project activity will see an alignment of the NSW Police Force organisational structure with 11 key services groups (or programs) summarising outputs provided to the NSW community.

NSW Police Force
RECRUITING NOW
1800 222 122
www.police.nsw.gov.au/recruitment

FINANCE AND BUSINESS SERVICES Corporate Services

Police Executive Officers Locked Bag 5102 Parramatta NSW 2124

T 02 8263 6483 FN 45483 F 02 8263 6411 FN 45411 W www.police.nsw.gov.au

TTY 02 9211 3776 for the hearing and speech impaired see 43 43 43 43

TRIPLE ZERO (000)

Emergency only

POLICE ASSISTANCE LINE (131 444)

For non-emergencies

CRIME STOPPERS (1800 333 000)

Report crime anonymously

In the recent State Budget the NSW Government indicated that a "comprehensive independent review to examine all opportunities to achieve savings and consideration of operational and structural reforms in Police" would be conducted. It is expected that this review will be completed within the 2015-16 financial year. The outcomes of this review will inform the development of future financial, operational and performance metrics for the NSW Police Force.

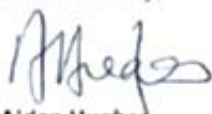
With specific reference to your recommendations:

- The establishment of **productivity and efficiency targets**; and
- The **investigation of better ways to measure the output of policing activities including proactive policing activities**

will be considered in the progress of work in support of the RMI Project and the Government initiated review of NSW Police Force operations. It is not possible to put a completion date on these tasks at this time.

The NSW Police Force currently reports on a range of productivity, effectiveness and quality indicators in the annual publication "The Report on Government Services (RoGS)". To address your recommendations with regard to reporting **productivity and efficiency trends to Parliament** the NSW Police Force will include relevant material in an Appendix to the NSW Police Force Annual Report, which is tabled in Parliament. The 2014-15 Annual Report will include material in the RoGS format and results derived under the Audit Office methodology.

Yours sincerely,



Aidan Hughes
Director, Finance & Business Services
New South Wales Police

Department of Justice



Justice

Office of the Secretary
Justice Precinct Offices
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Tel 02 8688 7777 | Fax 02 8688 7980
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Mr A T Whitfield
A/ Auditor-General
Audit Office of NSW
Level 15, 1 Margaret Street
SYDNEY NSW 2000

Dear Mr Whitfield

I am writing in response to your letter of 5 June 2015 whereby you invited me to provide a response on behalf of the Department of Justice in regard to the **Performance Audit – identifying productivity in the public sector**. Thank you for the opportunity to provide a formal response for inclusion in the published report.

The Department of Justice is pleased by the finding that the Local Court “*exhibited improving productivity trends*” and “*an improving efficiency trend*”. Both efficiency and productivity have been focus areas for the Local Courts over several years as is exhibited by your finding that with regard to the 2007 and 2011 wage policy “*the NSW Local Court was the only activity we examined where employee related expenses grew at less than 2.5 per cent per year*”.

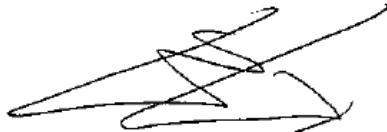
The Department acknowledges that there is room to improve in our ability to measure and track productivity through more detailed data. As is evident in the report, data improvement has been ongoing since the implementation of Justicelink and it will continue to be developed with system upgrades in the future.

While the Department acknowledges and accepts the recommendations to improve our measurement of productivity and quality as well as increase the publication of this information, it should be noted that the NSW Local Court Annual Review does already include the cases commenced and finalised for each jurisdiction (and by location for criminal matters), and the timeliness of the disposal of cases. Furthermore, with regard to the suggestion that NSW should publish data similar to Victoria’s Magistrates’ Court, these recommended reporting items are almost all already reported in other publications such as the NSW Local Court Annual Review, BOCSAR reports, and SDRO reporting on fine enforcement.

Courts and Tribunals are undertaking significant transformation programs to improve the client experience, increase efficiency and improve productivity. These are initiatives that will have an impact not only within Courts but across the Department and stakeholder agencies. The recommendations related to the establishment of efficiency and productivity objectives, accessibility and reliability of data, publication of productivity trends and the implementation of a framework are all relevant and will be incorporated in to the programs. Due to the scale of this work, it is unlikely that all deliverables will be met by March 2016.

However, with regard to the reporting of efficiency and productivity information to Parliament, these recommendations will be adopted and implemented by March 2016.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Andrew Cappie-Wood', with a stylized, overlapping loop structure.

Andrew Cappie-Wood
Secretary

30 JUN 2015



Contact: C Curtin
Telephone: (02) 9228 4246
Our Reference: pa5547
Your Reference: PA15/2593

1 July 2015

Mr Tony Whitfield
Acting NSW Auditor- General
Audit Office of NSW
GPO Box 12
SYDNEY NSW 2001

Dear Mr Whitfield

Performance Audit – Identifying productivity in the public sector

Thank you for the opportunity to provide comment on the report of the above audit. NSW Treasury supports the report's view that productivity and efficiency go hand-in-hand, and understanding, tracking, and reporting on both productivity and efficiency is key to improving performance. Treasury supports the recommendations identified for Treasury.

As your report notes, NSW Treasury is currently leading the Financial Management Transformation (FMT) program, which is modernising the financial management framework that supports the NSW public sector. This includes increasing transparency and strengthening agencies' emphasis on performance and outcomes.

FMT is working with the sector on a range of policy reforms, including the implementation of 'Program-based Budgeting and Reporting'. This policy will shift focus onto performance and results, and will include guidelines on the construction of key performance indicators, including those relating to productivity and efficiency. The policy will be accompanied by enhanced performance reporting requirements, to improve transparency.

NSW Treasury has commenced a full review and refresh of all existing Treasury policies and guidance material available to the sector; this will include TPP 01-03 the guidelines relating to economic appraisal. Treasury will work with key stakeholders, the Department of Premier & Cabinet and Public Service Commission, to ensure that guidance is provided to NSW Government agencies on how to measure productivity and efficiency.

Treasury appreciates work undertaken by the Audit Office on this issue and Treasury will help support ongoing work with the NSW public sector on the important subjects of understanding and identifying productivity, and improving transparency.

Yours sincerely

A handwritten signature in black ink, appearing to read 'P Gaetjens'.

Philip Gaetjens
Secretary

Appendix 2: About the audit

This audit examined the performance reporting for several areas of government activity to see if the information is available to identify and assess changes in their productivity. In reaching an opinion against the audit objective we will seek to answer the following questions:

1. do the agencies have the ability to track their productivity and efficiency in the selected activities over time?
2. are the agencies reporting the productivity and efficiency of these activities to parliament?
3. does the available data demonstrate productivity and efficiency trends?

Scope

This audit assessed the performance information on productivity and efficiency of the following six activities in five agencies:

- NSW Health – acute inpatient care
- the Department of Education and Communities – primary and secondary school education
- Transport for NSW – CityRail
- the NSW Police Force – all activity
- the Department of Justice – NSW Local Court.

Audit exclusions

The audit excluded:

- performance measurement and reporting unrelated to efficiency and productivity
- all other NSW Government agencies
- productivity and efficiency reporting beyond the evaluation period – between 2008–09 (2009–10 for CityRail) and 2012–13 (2013–14 for the NSW Local Court).

Audit approach

To address the above criteria and above focus areas the audit team utilised the following audit procedures.

Interviews with:

- officers responsible for performance reporting, within agencies
- central agency (NSW Treasury, Public Service Commission, the Department of Premier and Cabinet and the Department of Finance and Services) officers involved in performance management
- subject matter experts in productivity
- officers from other audit offices.

Examination of:

- publicly available academic literature, research, discussion papers, guidelines on productivity and efficiency concepts and reporting
- internal agency research papers on productivity and efficiency concepts and reporting
- public sources of performance reporting, such as:
 - Report of Government Services
 - Annual reports
 - State Plan Performance Reports
 - Bureau of Crime Statistics and Research (BOCSAR) reports
 - Australian Bureau of Statistics reports and data
- Internal agency performance reporting
- relevant agency policy, guidelines and legislation

- Awards and Enterprise Bargaining Agreements.

Agency selections

Agencies were selected according to their size of the overall New South Wales budget and portfolio diversity. According to the NSW Budget Papers 2015–16, the policy areas represented by these agencies accounted for 72 per cent of recurrent expenditure.

Audit selection

We use a strategic approach to selecting performance audits which balances our performance audit program to reflect issues of interest to Parliament and the community. Details of our approach to selecting topics and our forward program are available on our website.

Audit methodology

Our performance audit methodology is designed to satisfy Australian Audit Standards ASAE 3500 on performance auditing, and to reflect current thinking on performance auditing practices. Our processes have also been designed to comply with the auditing requirements specified in the *Public Finance and Audit Act 1983*.

Acknowledgements

We gratefully acknowledge the co-operation and constructive feedback provided by all agencies throughout the audit. In particular we wish to thank our liaison officers and their staff: Elizabeth Koff, Jacqui Ball, May Guise, Deborah Oong, Peter Riordan, Michael Waterhouse, Anthony Wing, Barbara Wise, Dominique Winn, Dave Hudson, Michael Talbot, and Gavin Azar.

We also recognise the advice and information provided by following agency staff: NSW Health Senior Executive Team, Zoran Bolevich, Neville Onley, Julia Herberle, James Broughton, Craig Jones, Transport for NSW Senior Executive Team, Aidan Hughes, Tony Ferguson, Sean Hannen, John Blanchette, Ross Duncombe, Caralee McLeish, Vicki Telfer, Ian Peters, Julian Cornelius, Rick Sondalini, Scott Wheeler, Dan Bunting, Stephen Brady, Sonja Stewart, Frances Parker and William Murphy.

We are also grateful to Dean Parham for his expert advice and guidance during the critical stages of this report.

Audit team

Chris Allen and Trevor Puckering conducted the performance audit. Kathrina Lo provided direction and quality assurance. Jed Kumarasiri and Neall Searle provided analytical and report writing support.

Former Audit Office staff Grant Hehir, Rob Mathie, Sean Crumlin, and Penny Josey also made significant contributions to the delivery of this report.

Audit cost

Including staff costs and overheads, the estimates cost of the audit is \$425,000.

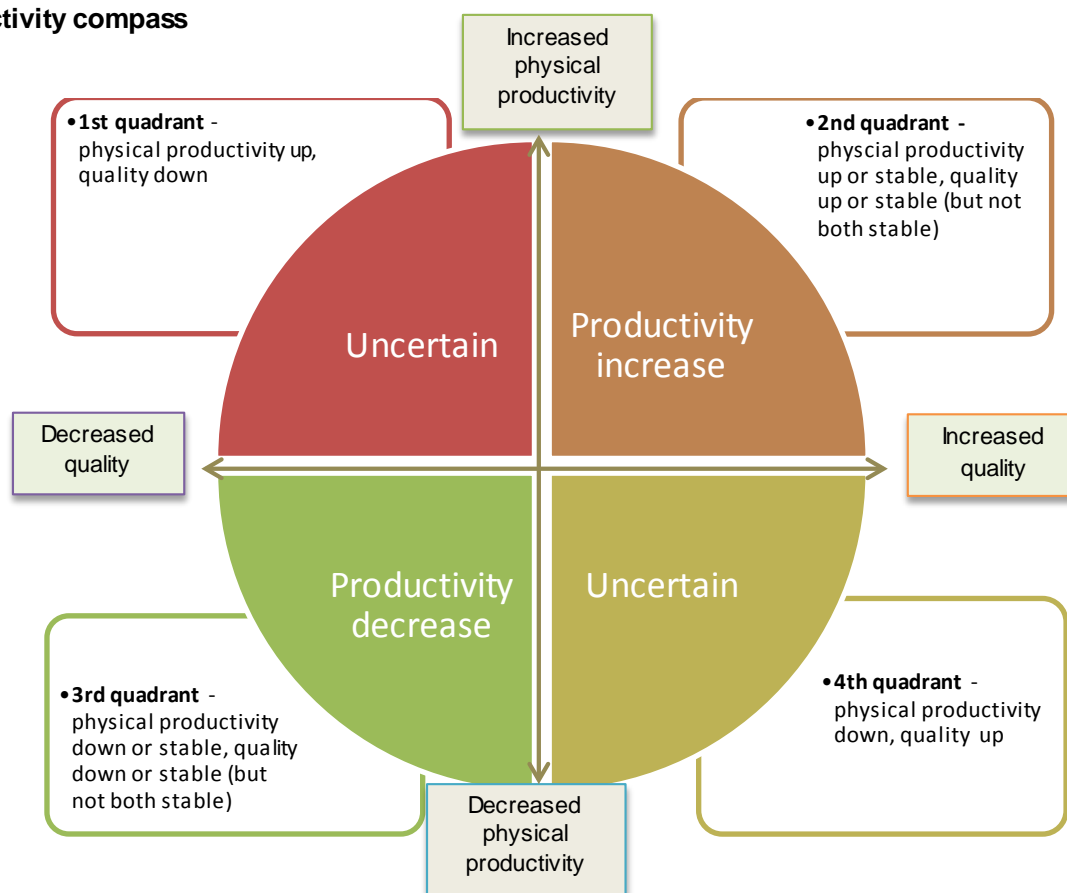
Appendix 3: Productivity assessment – compass method

The following assessment is a method devised by the Audit Office to identify productivity trends in public service agencies. The methodology uses both publicly and internal key performance information to identify productivity trends. The methodology consists of two parts:

1. **Productivity trends** – the ‘compass’ is a tool used to help identify productivity trends. The compass consists of four quadrants:
 - First quadrant – this is the region where there is an increase in physical productivity associated with a decrease in quality. In this case we are unable to conclude with certainty the trend in productivity because we are unable to compare the magnitude of changes
 - Second quadrant – this is the region where there is an increase in, or stable, physical productivity associated with an increase in, or stable quality (but not both stable). In this case we can conclude with certainty that overall productivity has increased
 - Third quadrant – this is the region where there is decrease in, or stable, physical productivity associated with a decrease in, or stable quality (but not both stable). In this case we can conclude with certainty that overall productivity has declined
 - Fourth quadrant – this is the region where there is an increase in physical productivity associated with a decrease in quality. In this case we are unable to conclude with certainty the trend in productivity because we are unable to compare the magnitude of changes.

Where both physical productivity and quality are stable over time, then productivity is constant.


Productivity compass



2. **Efficiency trends** – it is also important to understand how productivity trends are related to costs. For this reason efficiency trends are also considered. Efficiency is defined as the average cost per unit of output. Nominal costs are deflated to arrive at the real cost trends over time.

Appendix 4: Acute inpatient care

Physical productivity

	2008-09	2012-13	Difference (%)	Outcome
NWAU – acute inpatient	1,223,411	1,335,426		
Clinical FTEs	44,836.7	46,645.2		
NWAU per clinical FTE staff	27.3	28.6	4.9	

Source: NSW Health Information Exchange

Notes: - National Weighted Activity Units are expressed as NWAU15 for comparability

- FTE and activity data have been backcast over the audit period for the 84 hospitals currently funded under the national ABF system

- Derivation - based on Clinical staffing only (Medical, Nursing & Midwifery, Allied Health Professionals, Other Professionals, Para-professionals & clinical support staff, Scientific & technical support staff). Clinical staff in some facilities may be delivering activity in relation to community services, outpatient clinics and other non-acute services.

- Based on Productive, Non-Productive and Overtime hours.

- Based on average FTE of each financial year.







- Adjustments - some facilities adjusted for Health Reform Transition Organisations movements and internal restructures as part of NSW Health governance reform over the audit period

- Does not include FTE count for St Vincent's Hospital – St Vincent's Specialty Health Network operates under a separate legislative framework and is quasi-independent of NSW Health, which limits access to financing and staff data.

- The capacity to report on backdated payroll adjustments (when an employee receives a pay award for a previous pay period) started in 2012-13. For consistency, the average of the 2012-13 and 2013-14 years has been applied to the 2008-09 to 2011-12 period.




- Data provided in the table is not comparable to NSW Health Annual Report figures, which are based on a snapshot as at June of each year. The Annual Report does not include the reporting of overtime and backdated payroll adjustments before FY 2012.

Adjusting for Quality

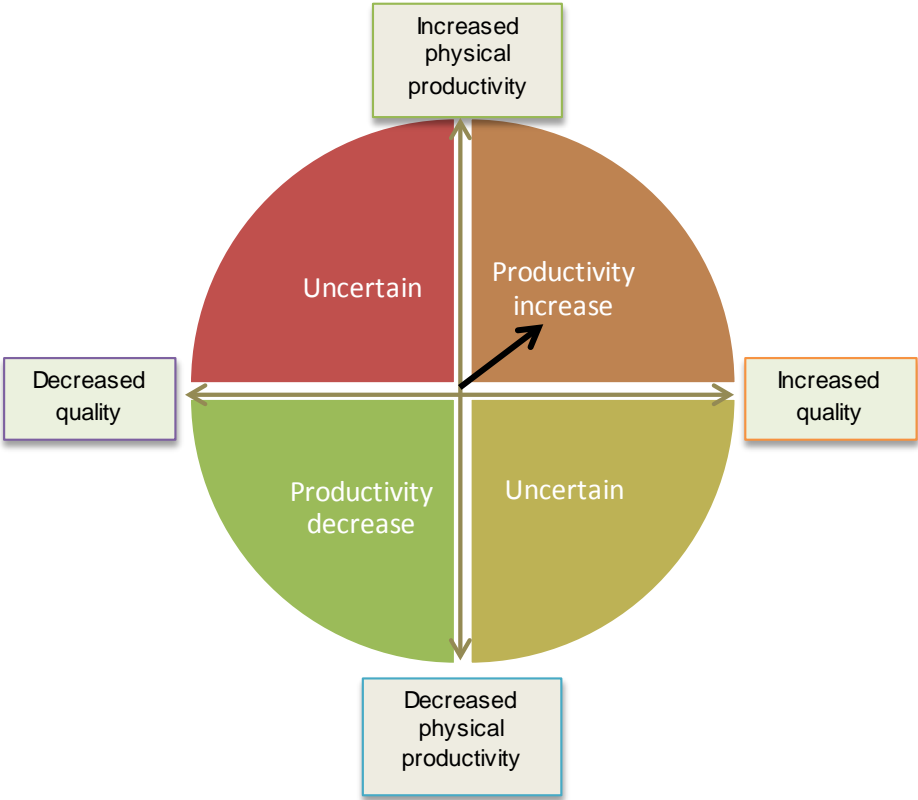
Measure	2008-09	2013-14	Percentage difference (%)	Outcome	Source
Staph Aureus Infection (rate per 10,000 bed days)	1.7	0.9	(47)		Health System Information and Performance Reporting Branch, December 2014
Inpatient experience in public hospitals (% with a positive experience)	91.1	91.0	Statistically insignificant		Health System Information and Performance Reporting Branch, December 2014
Life expectancy (years): - males - females	77.3 (2001) 82.6 (2001)	77.9 (2011) 84.2 (2011)	3 2	 	Bureau of Health Information, <i>Healthcare in Focus: 2013</i> , annual performance report
Unplanned readmission of a patient within 28 days following discharge to the same facility	6.4 (2010-11)	6.7 (2013-14)	4.7		NSW 2021 Performance Report 2014-15 Budget Related Paper No. 1
Overall					

Notes: Inpatient experience was deemed to be stable over the period because the indicator did not vary more than 2 per cent over the period. A minimum of two per cent variation is required for statistical significance.

Key

Indicator	Interpretation
	Improving trend
	Stable
	Declining trend

Quality-adjusted productivity



Appendix 5: Primary school education

Physical productivity

	2008-09	2012-13	Difference (%)	Outcome
Ratio of FTE students to FTE staff	11.9	11.5	(3)	●

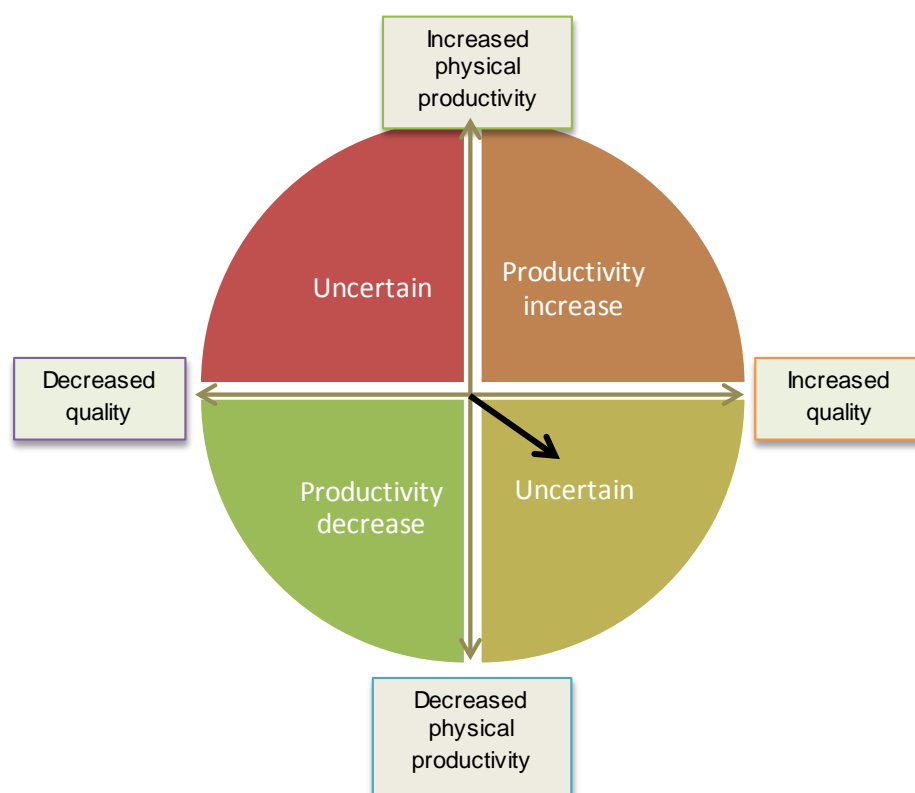
Source: Report on Government Services 2014.

Adjusting for Quality

Proportion of NSW students achieving at & above the national minimum standard	2008-09	2012-13	Percentage point difference	Statistical significance of the difference
Year 3 Reading (%)	95.1	96.3	1.2	Not significant
Year 5 Reading (%)	93.5	96.8	3.3	●
Year 3 Numeracy (%)	96.9	96.4	(0.5)	Not significant
Year 5 Numeracy (%)	94.4	93.9	(0.5)	Not significant
Overall				●

Source: National Assessment Program (2013), Literacy and Numeracy, p. 271
National Assessment Program (2013), Literacy and Numeracy, p. 292

Quality-adjusted productivity



Appendix 6: Secondary school education

Physical productivity

	2008-09	2012-13	Difference (%)	Outcome
Ratio of FTE students to FTE staff	9.7	9.6	(1.1)	●

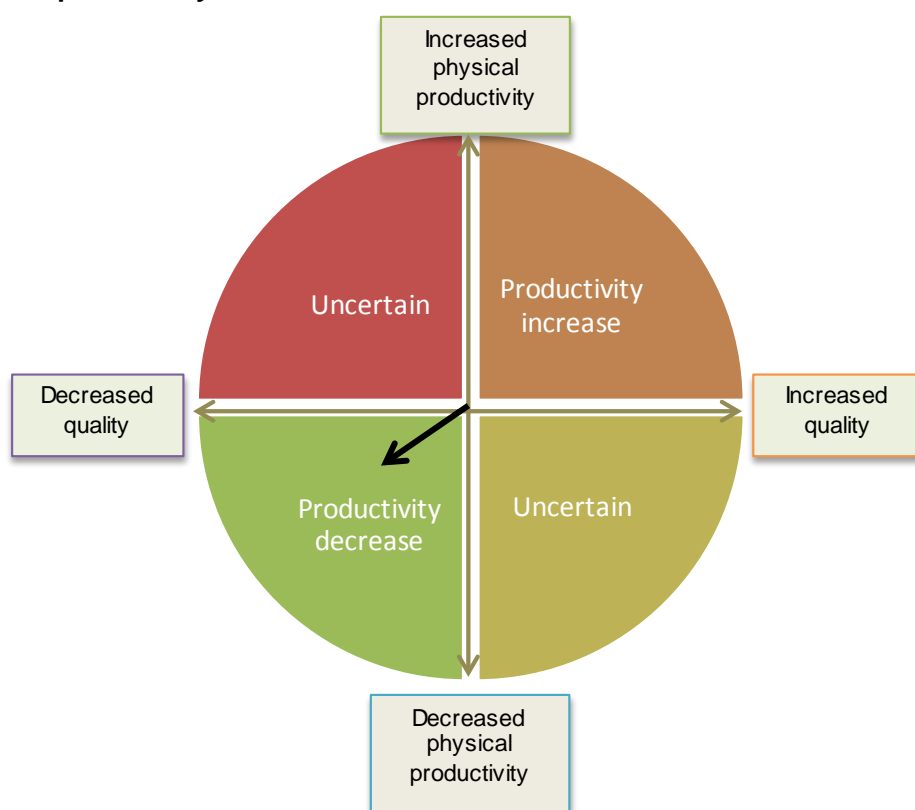
Source: Report on Government Services 2014

Adjusting for Quality

Proportion of NSW students achieving at & above the national minimum standard	2008-09	2012-13	Difference (%)	Statistical significance of the difference
Year 7 Reading (%)	95.4	94.7	(0.7)	Not significant
Year 9 Reading (%)	94.4	94.1	(0.3)	Not significant
Year 7 Numeracy (%)	96.0	95.1	0.9	Not significant
Year 9 Numeracy (%)	94.7	90.4	(4.3)	●
Overall				●

Source: National Assessment Program (2013), Literacy and Numeracy, p. 271
National Assessment Program (2013), Literacy and Numeracy, p. 292

Quality-adjusted productivity



Appendix 7: CityRail

Productivity

	2009–10	2012–13	Change (%)	Outcome
Revenue Service Car Kilometres to Headcount (of CityRail)	17,288	18,216	5.4	●

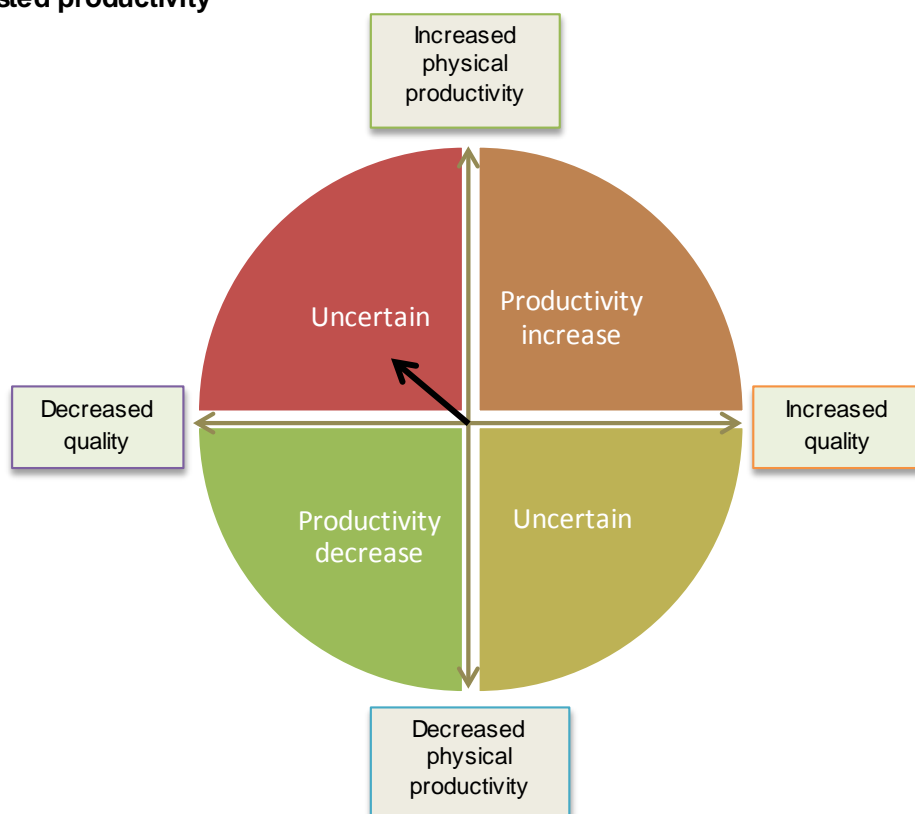
Source: Transport for NSW

Adjusting for Quality

	2009–10	2012–13	Change (%)	Outcome
On-time Running (%)	96.3	94.2	(2.2)	●
Complaints (No.)	21,782	26,364	21.0	●
Customer Satisfaction (%)	81.0 (data only available from 2010–11)	81.0	–	●
Overall				●


Source: Transport for NSW

Quality-adjusted productivity



Appendix 8: NSW Police Force





Physical productivity

Measure	2008–09	2012–13	Change (%)	Outcome
Police officers	19,680	20,286	3.1	
Population (of NSW)	7,053,755	7,409,445	5.0	
Population (of NSW) to policing staff ratio	358.4	362.3	1.9	

Source: Report on Government Services 2014




Quality adjustments

• Crime

Measure	2008–09	2012–13	Change (%)	Outcome
Legal Actions for domestic violence (rate)	61.9	60.3	(2.6)	
Incidents of assault (alcohol and non-domestic violence) (rate per 100,000)	265.6	185.1	(30.3)	
Incidents of personal crime (rate per 100,000)	1,094.7	961.5	(7.7)	
Incidents of property crime (rate per 100,000)	4,091.4	3,258.2	(16.4)	







Source: NSW Police Force

• Domestic violence and sexual assault

Measure	2008–09	2012–13	Change (%)	Outcome
Assault (domestic violence) (rate per 100,000)	364.9	378.3	3.7	
Sexual Assault (rate per 100,000)	58.7	57.9	(1.4)	
Overall crime				







Source: Report on Government Services 2014

- **Public safety**

Measure	2008–09	2012–13	Change (%)	Outcome
Road safety – fatalities/deaths (rate per 100,000)	6.4	4.6	(27.6)	
Perceptions of safety – public transport at night (% Total safe)	31.4	26.6	(15.3)	
Perceptions of safety – public transport at night (% Total unsafe)	24.9	18.5	(25.7)	
Perceptions of safety – walking after dark (% Total safe)	58.6	49.1	(16.2)	
Perceptions of safety – walking after dark (% Total unsafe)	21.8	20.4	(6.4)	
Overall public safety				

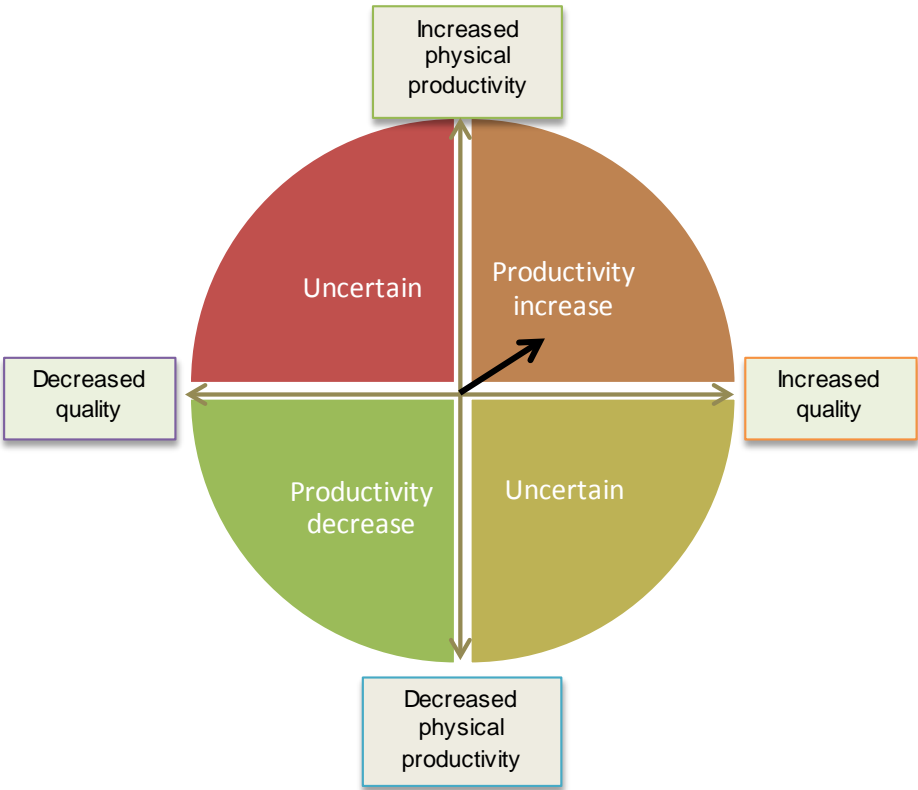
Source: Report on Government Services 2014

- **Community and partners**

Measure	2008–09	2012–13	Change (%)	Outcome
Community confidence in police (%)	81.1	83.8	3.3	
Community satisfaction with most recent contact with police (% total satisfaction)	77.5 data only available from 2010	83.3	7.5	
Community satisfaction with most recent contact with police (% total dissatisfaction)	14.9 data only available from 2010	10.1	(32.2)	
Customer service related complaints (rate per 100,000)	51	46	(9.8)	
Urgent calls responded to within target time (% of calls)	78	78.1	0.1	
Overall community and partners				


Source: Report on Government Services 2014; NSW Police Force

Quality-adjusted productivity



Appendix 9: NSW Local Court

Physical productivity

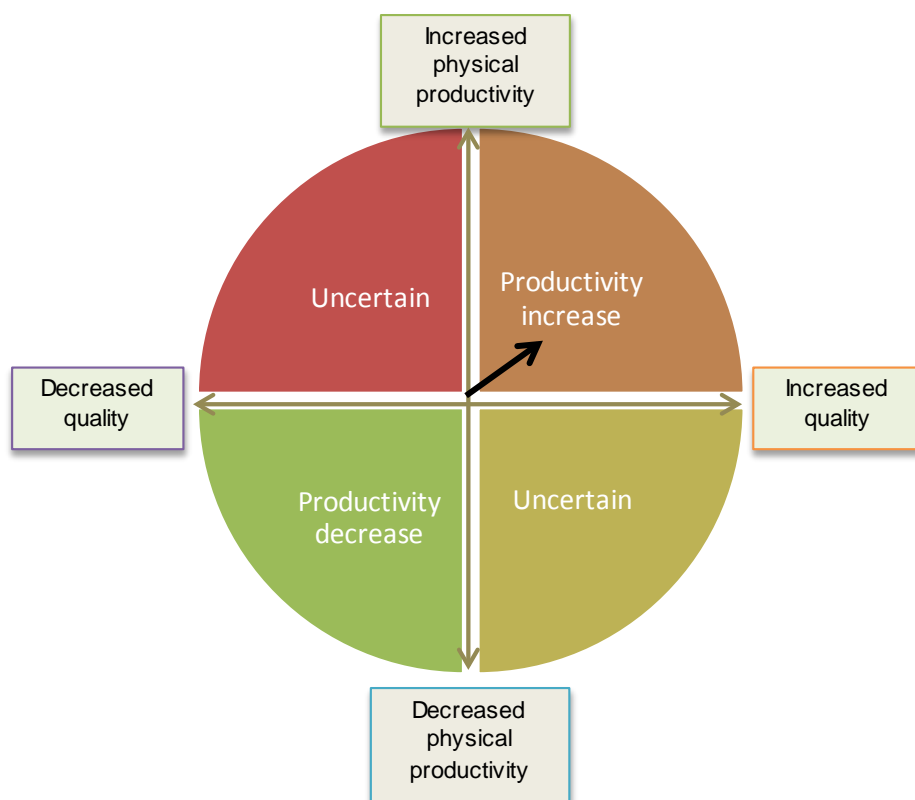
	Finalisations	Total FTE	Finalisations per FTE	Outcome
2011–12	302,965	1,067	284	
2012–13	296,668	1,028	288	
2013–14	294,741	991	297	
Change (%)			(9)	

Source: Report on Government Services 2014 and 2015

Adjusting for Quality

Quality in the NSW Local Court is assumed to be constant over time.

Quality-adjusted productivity



Performance auditing

What are performance audits?

Performance audits determine whether an agency is carrying out its activities effectively, and doing so economically and efficiently and in compliance with all relevant laws.

The activities examined by a performance audit may include a government program, all or part of a government agency or consider particular issues which affect the whole public sector. They cannot question the merits of government policy objectives.

The Auditor-General's mandate to undertake performance audits is set out in the *Public Finance and Audit Act 1983*.

Why do we conduct performance audits?

Performance audits provide independent assurance to parliament and the public.

Through their recommendations, performance audits seek to improve the efficiency and effectiveness of government agencies so that the community receives value for money from government services.

Performance audits also focus on assisting accountability processes by holding managers to account for agency performance.

Performance audits are selected at the discretion of the Auditor-General who seeks input from parliamentarians, the public, agencies and Audit Office research.

What happens during the phases of a performance audit?

Performance audits have three key phases: planning, fieldwork and report writing. They can take up to nine months to complete, depending on the audit's scope.

During the planning phase the audit team develops an understanding of agency activities and defines the objective and scope of the audit.

The planning phase also identifies the audit criteria. These are standards of performance against which the agency or program activities are assessed. Criteria may be based on best practice, government targets, benchmarks or published guidelines.

At the completion of fieldwork the audit team meets with agency management to discuss all significant matters arising out of the audit. Following this, a draft performance audit report is prepared.

The audit team then meets with agency management to check that facts presented in the draft report are accurate and that recommendations are practical and appropriate.

A final report is then provided to the CEO for comment. The relevant minister and the Treasurer are also provided with a copy of the final report. The report tabled in parliament includes a response from the CEO on the report's conclusion and recommendations. In multiple agency performance audits there may be responses from more than one agency or from a nominated coordinating agency.

Do we check to see if recommendations have been implemented?

Following the tabling of the report in parliament, agencies are requested to advise the Audit Office on action taken, or proposed, against each of the report's recommendations. It is usual for agency audit committees to monitor progress with the implementation of recommendations.

In addition, it is the practice of Parliament's Public Accounts Committee (PAC) to conduct reviews or hold inquiries into matters raised in performance audit reports. The reviews and inquiries are usually held 12 months after the report is tabled. These reports are available on the parliamentary website.

Who audits the auditors?

Our performance audits are subject to internal and external quality reviews against relevant Australian and international standards.

Internal quality control review of each audit ensures compliance with Australian assurance standards. Periodic review by other Audit Offices tests our activities against best practice.

The PAC is also responsible for overseeing the performance of the Audit Office and conducts a review of our operations every four years. The review's report is tabled in parliament and available on its website.

Who pays for performance audits?

No fee is charged for performance audits. Our performance audit services are funded by the NSW Parliament.

Further information and copies of reports

For further information, including copies of performance audit reports and a list of audits currently in-progress, please see our website www.audit.nsw.gov.au or contact us on 9275 7100

Our vision

Making a difference through audit excellence.

Our mission

To help parliament hold government accountable for its use of public resources.

Our values

Purpose – we have an impact, are accountable, and work as a team.

People – we trust and respect others and have a balanced approach to work.

Professionalism – we are recognised for our independence and integrity and the value we deliver.

Professional people with purpose

Making a difference through audit excellence.

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