



Comptroller and Auditor General

Management Information in Education

22 September 2016



JERSEY AUDIT OFFICE

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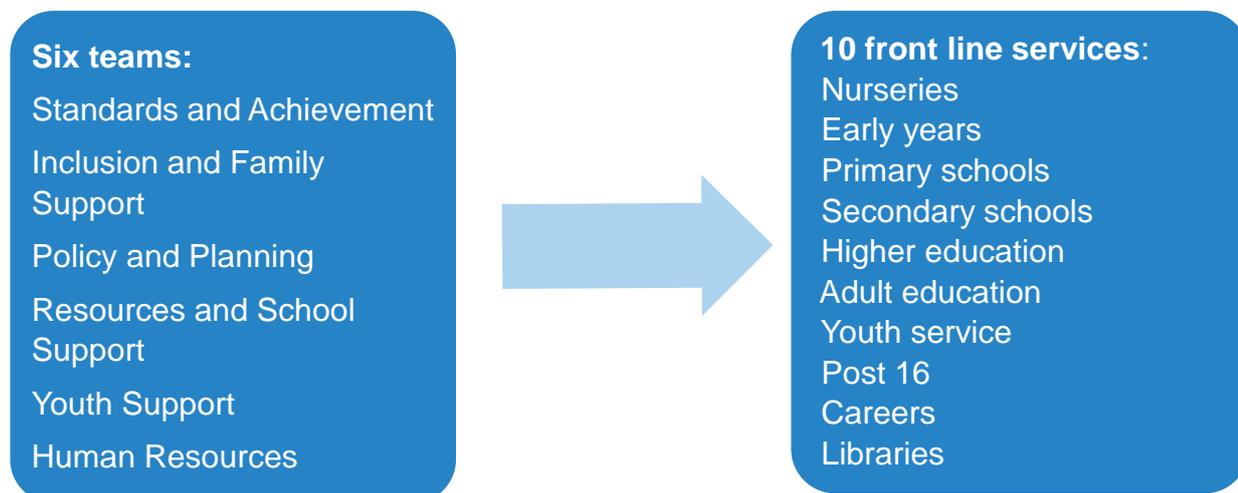
Introduction

- 1.1 Access to high quality and relevant management information is essential to enable organisations to make effective and efficient strategic and operational decisions at corporate, departmental and team level for both 'business as usual' and change initiatives. A commitment at all levels to effective specification, preparation and use of management information is a key component of a culture that drives improvement.
- 1.2 In 2014 I reported my findings on the availability and use of management information in the Health and Social Services Department, focussing on operating theatre utilisation.
- 1.3 This second review considers education services provided by the Education Department. High quality, secure information accessible within the Education Department and beyond is needed, not only to drive educational attainment but also to facilitate the wider provision of services to vulnerable children and families.

Background

- 1.4 The Education Department currently provides services to or supports more than 16,600 pupils, from nursery to university. The Department is organised into six teams to support service delivery which includes 24 primary schools, seven secondary schools, two special schools and alternative curriculum provision where appropriate.
- 1.5 The current organisation of the Education Department, which is evolving in response to changing need, is illustrated in Exhibit 1.

Exhibit 1: Organisation of the Education Department



- 1.6 In 2016 the total budget for the Department is £105 million, £61.3 million of which funds nursery, primary, secondary and special education provision.
- 1.7 Historically, attainment of GCSE grades A* to C by Jersey's 16 year-old pupils had been better than for pupils in England. But since 2009/10 England as a whole and most English local authority areas have outperformed Jersey. This only became apparent when management information was used and reported effectively.

1.8 The Education Department recognised the need for better management information to allow it to make evidence based decisions to evaluate the impact of initiatives to tackle the deterioration in relative performance. In early 2012 a report commissioned by the Department examined how data was used within the Department and by schools (see Exhibit 2).

Exhibit 2: Findings from 2012 review of use of data by the Education Department and schools

Area	Findings
Data availability	<ul style="list-style-type: none"> • no single source of data • often manual processes
Systems and data	<ul style="list-style-type: none"> • schools had a Central Management Information System (CMIS) but difficulties in its use meant alternative local systems were established • data entered numerous times into different systems • accuracy and completeness of data often poor
Consistency, transparency and guidance	<ul style="list-style-type: none"> • schools not always clear on how data will be used
Evaluation	<ul style="list-style-type: none"> • only high level indicators reported • need for consistent measure of pupil progress across primary and secondary education

1.9 Following this initial review, three further workstreams looked at:

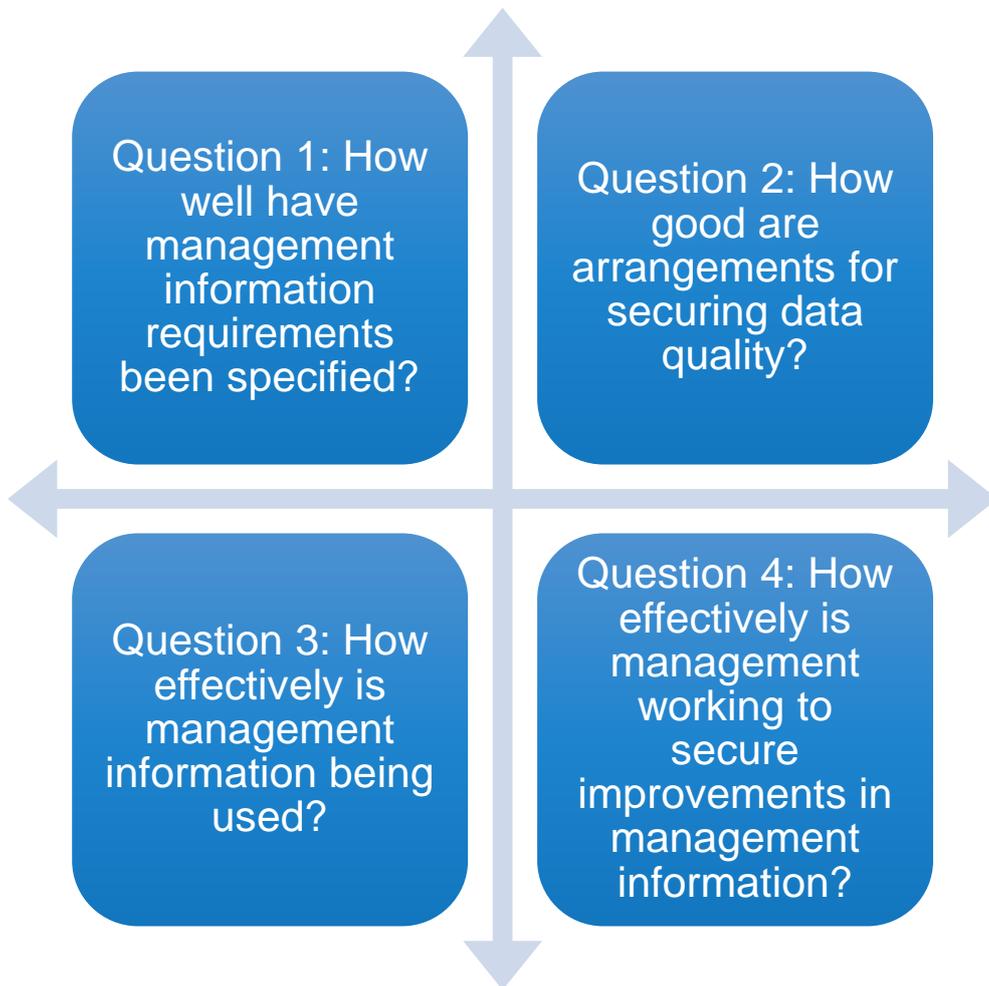
- best practice in analysis, reporting and use of information in education services;
- developing a strategic approach; and
- the experience and skill sets of those people involved in the provision of data analysis and reporting within the Education Department.

1.10 In response, in 2013 the Department established its 'Insight' team to drive better data and statistical analysis for education services. In 2015 the team grew to three people – a head of statistics (with a Masters in Official Statistics), one data manager and one data analyst. The Department recognises the need for strong leadership within the Insight team so that it remains independent and able to provide robust management information.

Objectives and scope of the review

- 1.11 This review focuses on the extent to which the Education Department:
 - has access to, and actively uses, high quality and relevant information for day to day performance management; and
 - has a robust information base from which to make decisions for the longer-term.
- 1.12 Collecting and using good management information is important for education services in all its areas of business.
- 1.13 The review seeks to answer four inter-related questions (see Exhibit 3).

Exhibit 3: Questions asked



- 1.14 To answer each of the four questions, I have concentrated my work on three specific workstreams that I have used as examples throughout this report (see Exhibit 4).

Exhibit 4: Workstreams reviewed

Workstream	Scope
Pupil and School attainment	Monitoring of performance against expected performance at Key Stages of the National Curriculum set by the UK Department for Education (DfE) e.g. proportion of pupils achieving A* to C at GCSE.
Jersey Premium	Targeted funding to support evidence based interventions for pupils from more disadvantaged backgrounds, similar to the UK Pupil Premium and based on the clear link between social deprivation and literacy levels. £0.8m is available for pilot schemes in 2016 with £1.9m for full implementation in 2017.
Education Business Partnerships	Drawing together of four existing initiatives and replacing the Skills Board, an employer body, to support the education, training and development of young people by linking businesses and their employees with schools and colleges. The target date for commencement has slipped from April to October 2016.

How well have management information requirements been specified?

- 2.1 Useful information needs to relate to the objectives of the organisation. Failure to collect and report information that relates to organisational objectives impedes the ability to determine whether those objectives are being achieved and increases the risk of poor value for money.
- 2.2 High performing organisations:
- link management information requirements to strategic objectives;
 - link information about activity and outcomes to that about resources used; and
 - plan to prepare and present management information in a way that facilitates decision making.
- 2.3 I consider in turn the Department's identification of relevant management information requirements:
- generally, in its business planning process; and
 - specifically, in the context of the individual workstreams selected as tracers.

Specification of management information requirements across the Department

- 2.4 The 2015 Education Department's Business Plan sets out high level departmental objectives aligned to the States' strategic goals, and the accompanying 'signs of success' indicating how progress will be gauged. An example of this approach is given in Exhibit 5.

Exhibit 5: Education Department Business Plan – Extract

Element of plan	Example
Strategic goal	To provide a first class education service, supporting the development of skills, creativity and life-long learning
Departmental objective	To raise standards and improve outcomes for Jersey's children and young people
Signs of success	<ul style="list-style-type: none"> • We will develop and agree with schools a range of key indicators by which they are held accountable; • Pupils' attainment and progress will improve in line with targets; • A range of progress measures will be agreed and published in the Department's statistical report for end of key stages; • Central teams are working more closely with schools more often; • Time and resources are saved by adopting new processes; • The number of hours of teaching observation will increase; and • There will be an increase in the number of States nursery places available.

- 2.5 As I reported in my 2016 *Review of Financial Management – Part 2*, some of the Business Plan’s objectives and aligned ‘signs of success’ are not sufficiently SMART (Specific, Measurable, Achievable, Relevant and Time-bound). Taking the example in Exhibit 5 above:
- many of the signs of success reflect a direction of travel, such as ‘reduce’ or ‘increase’ without a quantified outcome;
 - some measure inputs (such as hours of observation) rather than outputs or outcomes;
 - some (such as an increase in nursery places) do not directly link to the objective (of improving standards and outcomes);
 - in some cases (such as saving time and resources), the basis of measurement is not specified; and
 - some relate to future development of measures rather than agreed measures that will be used for internal monitoring and external accountability.
- 2.6 The Department’s Business Plan does not include financial information – that is, how the Department’s budget will be used in achieving objectives. Similarly, most of the ‘signs of success’ do not relate activities or outcomes to the financial resources used. This hinders the ability of the Department to assess the value for money secured from agreed actions or target improvement initiatives.
- 2.7 The Department intends to refresh and re-publish its Business Plan in the Autumn of 2016 and as part of this is working to improve the specification of Key Performance Indicators (KPIs) including:
- the methodology used to calculate outcomes;
 - how often performance against the KPIs will be evaluated;
 - targets and tolerances against each defined outcome measure; and
 - how and where each KPI will be reported.
- 2.8 Historically, arrangements for collation and communication of management information have been underdeveloped. The Department is currently piloting a template to show strategic progress against Business Plan objectives, bringing together an evaluation of progress against objectives and an assessment of risk to delivery. Using the templates for the first time, in June 2016 the Departmental Senior Management Team considered information about projects, including Pupil and School Attainment and the Jersey Premium but not the Education Business Partnership initiative.
- 2.9 The template is evolving but not does not yet include:
- hard data against KPIs;
 - financial information, for example budget position; or
 - critical achievements or activities for the next time period, which would help in monitoring direction of travel.
- 2.10 The Department has yet to:
- establish criteria for routine and ‘by exception’ reporting;
 - identify and formalise the mechanisms for reporting more widely, including to the Corporate Management Board; or
 - demonstrate that information on current performance is the basis not only for remedial action but also for future planning and prioritising.

Specification of management information requirements for the three tracer workstreams

2.11 The extent to which the Department has specified relevant management information requirements varies across the three workstreams examined (see Exhibit 6).

Exhibit 6: Specification of management information requirements for workstreams

Workstream	Management information requirements identified	Areas not yet fully developed
<p>Pupil and school attainment</p>	<p>The Department has adopted KPIs developed by the UK DfE and set specific targets for levels of attainment by specified dates e.g. ‘All key performance indicators will be in line with the average performance by the island’s statistical neighbours by 2020’.</p>	<p>Developing indicators to link pupil and school attainment to investment has been more challenging.</p> <p>The island’s four non-funded independent schools are not required routinely to provide the same level of information on attainment as States and part-funded non-States schools. The four schools provide varying levels of information. The Department recognises that work is required to ensure it identifies and collects sufficient, high quality performance information from these schools.</p> <p>Since 2015 the Special Educational Needs (SEN) team has been working with schools to record SEN interventions and their cost in a ‘Provision Map’. The team is now developing a way of evaluating the success of SEN interventions against expenditure.</p> <p>Success criteria have not been consistently established to enable the Department to determine whether changes to policy or practice have achieved the desired outcome. For example, on introduction of the new School Attendance and Absence policy.</p>

Workstream	Management information requirements identified	Areas not yet fully developed
Jersey Premium	Amongst the criteria for acceptance of pilot scheme proposals was that the impact of interventions could be measured in a timely manner.	Indicators are being developed to measure the impact of interventions e.g. through the impact on DfE KPIs.
Education Business Partnership	<p>KPIs have recently been adopted for the Trackers (apprenticeship) scheme but are not yet sufficiently comprehensive:</p> <ul style="list-style-type: none"> • some relate to achievements and qualifications gained but others are predominantly about process; for example, for 'Retention rate achievement' the measure is: 'A six monthly review by management' and not a target performance rating; • KPIs do not clearly align to departmental objectives; for example, there is no measure to meet the Business Plan objective: 'New areas, such as financial services and the digital sector, will be included in the Trackers apprenticeship programme'; and • there is no measurement of the relationship between resources expended and outcomes. 	<p>KPIs have not yet been identified for the new Partnership, covering areas such as:</p> <ul style="list-style-type: none"> • current and anticipated skills shortages; • employer investment in capacity; and • the effectiveness of work-related interventions such as Trident (work experience), Work Related Learning (learning in a work-based setting) and careers advice. <p>The Department is anticipating that management information needs will be established by October 2016 when the Partnership is due to be launched.</p>

Recommendations

- R1** Include within the Education Department's Business Plan, for each Departmental objective:
- KPIs linked to the objective (including strategic objectives set by the Council of Ministers);
 - KPIs linking outputs and, where feasible, outcomes to resources used; and
 - quantified targets/tolerances.

- R2** Develop reporting arrangements for management information to include:
- hard data against KPIs;
 - financial information, for example budget position; and
 - critical achievement of activities for the next time period.
- R3** Establish criteria for routine and exception reporting, including the mechanism for reporting to the Corporate Management Board as appropriate.
- R4** Take steps to demonstrate that information on current performance is the basis not only for remedial action but also for future planning and prioritising.
- R5** For changes in policy and practice together with individual initiatives or workstreams, ensure that prior to roll out:
- KPIs are developed, linked to objectives;
 - KPIs are developed, linking outputs or outcomes to resources used; and
 - quantified targets/tolerances for KPIs are set.

How good are arrangements for securing data quality?

3.1 Information for decision making is most useful when derived from high quality data. Where data is of a low quality there is:

- an increased risk that decisions are made which do not promote organisational objectives;
- a risk that information derived from the data is ignored in decision making.

3.2 Data quality has a number of attributes (see Exhibit 7).

Exhibit 7: Attributes of data quality

Attribute	Meaning
Accuracy	Data should provide a clear representation of activity, in sufficient detail, captured once only as close to the point of activity as possible.
Validity	Data should be recorded and used in accordance with agreed requirements, rules and definitions to ensure integrity and consistency.
Reliability	Data collection processes should be clearly defined and stable to ensure consistency over time.
Timeliness	Data should be collected and recorded as quickly as possible after the event or activity and should remain available for the intended use within a reasonable or agreed time period.
Relevance	Data should be relevant for the purposes for which it is used. Data requirements should be clearly specified and regularly reviewed to reflect any changes in needs. The amount of data collected should be proportionate to the value gained from it.
Completeness	Data should be complete and not contain redundant records.
Compliance	Data complies with statutory requirements on data protection and data security.

Source: Developed from *Improving information to support decision making: standards for better data quality* Audit Commission (2007)

3.3 I have evaluated arrangements for securing data quality by reviewing:

- arrangements in place across the Department; and
- arrangements for the three tracer workstreams.

Department-wide arrangements

- 3.4 Data quality definition and control is a responsibility of individual States Departments. However, the Education Department’s Insight team has not issued formal guidance to support data quality for ‘business as usual’ or project-level management information.
- 3.5 A States-wide approach is being developed as part of the eGovernment initiative: the Data Governance Council (DGC) is focused on the design and use of data sets and data elements. The Insight team plans to use the formal template and defined process for data collection. However as the DGC’s focus is on new data sets within eGovernment projects, this might not meet all of the Department’s needs

Arrangements in the three tracer workstreams

- 3.6 Arrangements for securing the quality of data supporting management information vary between the three workstreams (see Exhibit 8).

Exhibit 8: Data quality in the three tracer workstreams

Workstream	Strengths	Areas for development
Pupil and school attainment	<p>The Insight team has worked with individual schools to promote a consistent understanding of dimensions of data quality.</p> <p>For example, the Insight team has reviewed and reissued to States schools definitions for coding pupil non-attendance.</p>	<p>There has been no formal audit of data quality.</p> <p>Data on pupil attendance is incomplete for non-States schools.</p> <p>Overcoming cultural and process issues indicated by the outcome of the first Island-wide Teachers’ Survey, undertaken in 2015. This found that teachers ranked ‘recording, inputting, monitoring and analysing data’ as the second ‘most unnecessary and unproductive task’.</p>
Jersey Premium	<p>There are two dimensions to management information requirements:</p> <ul style="list-style-type: none"> • identifying eligible pupils (including those from families in receipt of Income Support or who would be eligible if they had met the five year residence qualification); and • measuring the impact of interventions. 	

Workstream	Strengths	Areas for development
<ul style="list-style-type: none"> - Identifying eligible pupils 	<p>Substantial work undertaken including:</p> <ul style="list-style-type: none"> • matching of data to Social Security records; • cleansing of data; • checking with schools; and • consultation with parents. 	<p>Reliance on School identification and self-certification by parents to identify pupils from families who would be eligible but for the five year residence requirement.</p>
<ul style="list-style-type: none"> - Measuring the impact of interventions 	<p>Heavy reliance on existing, standardised data already routinely collected and where data quality has improved.</p> <p>Guidance from the Department to schools developing pilots.</p> <p>Strong emphasis on establishing data sets at pilot approval stage.</p> <p>Use of control groups so that management information relates to comparative performance.</p> <p>Recognition of need for both hard data and softer intelligence.</p>	
<p>Education Business Partnership</p>	<p>Process for checking and cleansing data for Trackers (apprenticeship) scheme.</p>	<p>Use of three separate databases to store employer and student information, affecting accuracy and completeness.</p> <p>Heavy reliance on manual input of data at several stages, affecting accuracy and completeness.</p> <p>Multiple uncoordinated contacts with employers and schools with different levels of information available from each.</p>

Recommendations

- R6** Consider extending corporate standards on data quality to all data rather than just that covered by eGovernment projects.
- R7** In the absence of corporate standards for data quality, provide guidance and monitor its implementation within the Department.
- R8** Undertake an assessment of data quality for individual workstreams as a benchmark to drive improvement.

How effectively is management information being used?

- 4.1 Good quality data is most valuable when it is compiled, reported and used appropriately to provide management information to support evidence based decision making.
- 4.2 Department-wide review of management information is only being piloted. I have therefore focussed on the use of management information within the three tracer workstreams.
- 4.3 The maturity of approach to reporting and using management information in each of the three areas reviewed varies (see Exhibit 9).

Exhibit 9: Use of management information for the tracer workstreams

	Strengths	Areas for development
Pupil and school attainment	<p>Management information is used to report to the public on:</p> <ul style="list-style-type: none"> • performance against Key Stages 2 to 4 and at 'A' levels Island-wide and by school; and • progress between age 11 and 16, including by gender, those with English as an additional language and those with Special Educational Needs. <p>Intelligence used within the Department includes:</p> <ul style="list-style-type: none"> • this same information but at a named pupil level; • comparative information which enables the 'value add' to be assessed; and • contextual information such as attendance rates. 	<p>The inclusion of performance characteristics of pupils and schools:</p> <ul style="list-style-type: none"> • receiving the Jersey Premium funding; and • benefitting from services within the EBP initiative. <p>How this data will be routinely used to understand the impact of work and take corrective action as appropriate is being actively considered as these workstreams progress.</p>
Jersey Premium	<p>Management information on eligible pupils has been used to direct funding.</p> <p>Self-evaluation templates for the outcome of interventions are analysed by the Jersey Premium project team and Professional Partners, with advice from UK Pupil Premium experts, with the aim of</p>	<p>The number of eligible pupils is higher than anticipated but no decision on how best to use the funding – target fewer children or spend less per child – has been taken.</p> <p>Action if pilot funding has not been applied in line with plans has yet to be determined.</p> <p>Evaluation mechanisms following the inclusion of the Jersey Premium</p>

Strengths	Areas for development
<p>identifying the most efficient and effective interventions.</p> <p>In July 2016 a conference was held to share experiences and outcomes to date with all States schools.</p> <p>The output from this is helping inform a three year Review Framework cycle of peer and independent evaluation.</p> <p>The Department has set out firm, timetabled plans and a clear methodology to:</p> <ul style="list-style-type: none"> • evaluate for each project: <ul style="list-style-type: none"> ○ actual spend against allocated funds; ○ a per pupil spend against success criteria; and ○ actual resources used in the pilot. • categorise activities as high, medium or low for both cost and impact. • by October 2016, produce: <ul style="list-style-type: none"> ○ a report for the Department and schools highlighting learning from the pilot; and ○ an operational policy for schools, with guidance for the 2017 full rollout. <p>As part of this the Department is also planning to:</p> <ul style="list-style-type: none"> • compare evidence of the impact of interventions at different ages to determine whether early intervention is more effective; and • identify and fund Continuous Professional Development training on the basis of its evaluation of the impact of the pilots. 	<p>in core school budgets from 2017 are yet to be fully developed.</p>

	Strengths	Areas for development
Education Business Partnership	Important research has been undertaken to provide management information to inform the Business Case for the creation of the EBP.	<p>As the objectives, management information requirements and data quality arrangements for the Partnership have yet to be fully developed, the Partnership is not yet at the stage where it is identifying and using management information routinely.</p> <p>In particular, there is as yet insufficient information as a basis for development of a skills agenda for Jersey.</p>

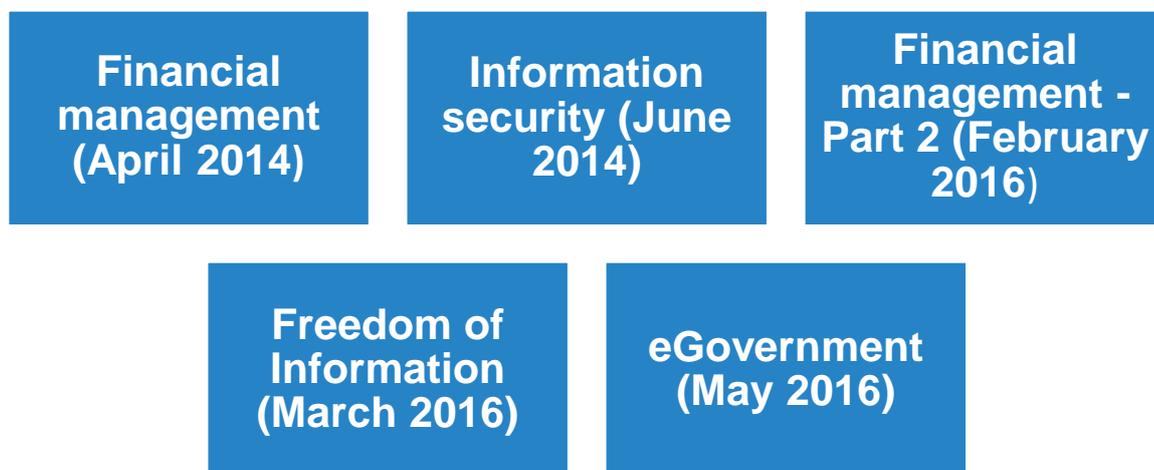
Recommendations

- R9** Promote targeted improvement in the routine use of management information to inform decision making by relevant staff, including through the use of appropriate objectives in individual performance appraisals.
- R10** Develop action plans to address the weaknesses in use of management information identified for the tracer workstreams.

How effectively is management working to secure improvements in management information?

- 5.1 High-performing organisations recognise that information needs, information technology and the capacity to use information change – and that they must respond to make the best use of information. Such organisations have a culture which not only values information but also values learning and uses it to drive improvement.
- 5.2 Many of my reports have focussed on corporate challenges in using information effectively (see Exhibit 10).

Exhibit 10: Comptroller and Auditor General reports focussing on information



- 5.3 Although many of the messages in these reports are corporate, many of the findings and recommendations are applicable in whole or part to individual departments.
- 5.4 The Department's awareness of data and information issues has improved and it has recognised the need to develop the capacity and capability of its existing information systems, to improve:
 - flexibility and usability;
 - data integration and sharing;
 - data quality; and
 - information presentation to support decision making.
- 5.5 Key initiatives taken by the Department are set out in Exhibit 11.

Exhibit 11: Initiatives to improve use of information

Issue	Steps taken	Challenges
<p>Replacement of the Central Management Information System (CMIS)</p>	<p>CMIS does not integrate with the case management system used by Children’s Services within the Health and Social Services Department (HSSD). As a result key contextual information about a child or young person may not be shared.</p> <p>Information on Special Educational Needs is held on a separate system.</p>	<p>Jointly-managed Education/HSSD procurement of replacement systems which are intended to meet departmental and cross-departmental requirements.</p> <p>Close involvement of eGovernment project manager to future-proof the systems chosen.</p> <p>Original timetable has slipped by one year to September 2017.</p> <p>Difficulties in finding a system that meets functional specification for both the Departments and for schools, and is affordable. Under the most recent plans two systems would be procured but Education and Children’s Services staff would be able to access relevant shared information. However, whereas Education staff would be able to see this information in one place, system limitations mean Children’s Services staff would need to sign into the Education reporting system to do so.</p> <p>Concluding how best to share information between the Department and HSSD.</p> <p>Risks associated with data migration.</p>

	Issue	Steps taken	Challenges
Operational data reporting	Routine reporting of operational data was limited by the functionality of CMIS. There was reliance on associated spreadsheets.	Tableau business intelligence software now in use enabling creation of live and bespoke dashboards and storyboards, making it easier, for example, to look at KPIs against resources.	Value depends on the relevance and quality of underlying data and information. Linking effectively with a corporate approach and the eGovernment agenda.
Data and information sharing	Recognised need for sharing information with other States departments and beyond. For example, reducing numbers of school leavers that are 'Not in Employment, Education or Training' (NEET) is a States objective. But getting robust information on destinations of school leavers is challenging.	The Insight team is developing an approach to collecting information on destinations of school leavers. Data sources within and outside the States have been identified and engaged. Work is now underway to access datasets.	Cleansing data. Identifying the frequency with which data in different systems is updated. Ensuring that data is held and shared at individual pupil level. Establishing follow-up mechanisms where destinations of school leavers cannot be established from data sources.
Lean	A States-wide initiative to drive efficiency using Lean principles.	Development of the EBP is following Lean principles in bringing together and streamlining allocation and use of resources.	Using these principles in 'business as usual' as part of continuous improvement rather than as a 'project' when structural change provides an opportunity. Developing use of the principles in schools and colleges, including in rationalising course delivery.

	Issue	Steps taken	Challenges
eGovernment	A States-wide initiative to transform the relationship between the States and citizens, facilitated by the use of technology.	<p>The Insight team leader is closely involved with the eGovernment workstreams 'Tell Us Once' so changes in family and pupil information within the education system is updated across other States' systems.</p> <p>The procurement panel for the new Management Information System (MIS) includes the eGovernment Programme Director.</p>	<p>Establishing expectations and mechanisms to routinely work with the eGovernment initiative to:</p> <ul style="list-style-type: none"> • share learning - for example from the issues associated with data matching for the Jersey Premium; • secure the benefits of 'thinking differently' about business, management as eGovernment is mainstreamed; and • engage schools and colleges.

Recommendations

- R11** Consider the relevance of findings and recommendations of Comptroller and Auditor General reports relating to information to the Education Department and identify appropriate action.
- R12** Foster a culture of continuous improvement in management information:
- driven throughout the Department, schools and colleges;
 - working with other States departments, to secure benefits across the States;
 - by promoting adoption of good practice through the mechanism of the Corporate Management Board; and
 - by reporting back to teachers the impact that the data they have input has had on decision making.

Conclusion and way forward

- 6.1 The Department has taken important and positive steps in developing and using management information.
- 6.2 Expertise has been secured and capacity increased through the establishment of the Insight team. The need for integrated systems has been recognised and procurement of a key system is in hand. Steps have been taken to make it easier to access information. There is experience of working with others to share data for mutual benefit and further plans are in hand. Arrangements for Department-wide use of management information are improving. A culture where data and information are valued is being fostered.
- 6.3 But there is more to do. The Department's business plan does not yet drive its management information requirements. Information does not routinely link outputs and outcomes to the resources used to secure them. Key Performance Indicators are not embedded as a way of managing the Department. Targets for improvement are often not specified or quantified. Arrangements for securing data quality are inconsistent. There is more to do to specify and use information effectively, across the Department, within schools and in individual workstreams.
- 6.4 Improved information is needed to:
 - support the ambitious plans the Department has for improvement, including initiatives such as the development of a programme of whole school reviews; and
 - to facilitate working with other departments (including to facilitate the wider provision of services to vulnerable children and families).
- 6.5 The Department needs to maintain the momentum to specify the information it needs, secure high quality data to provide the information and then routinely use the information to drive decision making. This will help secure a culture of learning and improvement across the whole Department and in schools which in turn drives improvement in public services.
- 6.6 In addition embracing information-led management within the Department will contribute to the cultural change that is needed to improve service delivery across the States.

Appendix 1: Summary of Recommendations

How well have management information requirements been specified?

- R1** Include within the Education Department's Business Plan, for each Departmental objective:
- KPIs linked to the objective (including strategic objectives set by the Council of Ministers);
 - KPIs linking outputs and, where feasible, outcomes to resources used; and
 - quantified targets/tolerances.
- R2** Develop reporting arrangements for management information to include:
- hard data against KPIs;
 - financial information, for example budget position; and
 - critical achievement of activities for the next time period.
- R3** Establish criteria for routine and exception reporting, including the mechanism for reporting to the Corporate Management Board as appropriate.
- R4** Take steps to demonstrate that information on current performance is the basis not only for remedial action but also for future planning and prioritising.
- R5** For changes in policy and practice together with individual initiatives or workstreams, ensure that prior to roll out:
- KPIs are developed, linked to objectives;
 - KPIs are developed, linking outputs or outcomes to resources used; and
 - quantified targets/tolerances for KPIs are set.

How good are arrangements for securing data quality?

- R6** Consider extending corporate standards on data quality to all data rather than just that covered by eGovernment projects.
- R7** In the absence of corporate standards for data quality, provide guidance and monitor its implementation within the Department.
- R8** Undertake an assessment of data quality for individual workstreams as a benchmark to drive improvement.

How effectively is management information being used?

- R9** Promote targeted improvement in the routine use of management information to inform decision making by relevant staff, including through the use of appropriate objectives in individual performance appraisals.
- R10** Develop action plans to address the weaknesses in use of management information identified for the tracer workstreams.

How effectively is management working to secure improvements in management information?

R11 Consider the relevance of findings and recommendations of Comptroller and Auditor General reports relating to information to the Education Department and identify appropriate action.

R12 Foster a culture of continuous improvement in management information:

- driven throughout the Department, schools and colleges;
- working with other States departments, to secure benefits across the States;
- by promoting adoption of good practice through the mechanism of the Corporate Management Board; and
- by reporting back to teachers the impact that the data they have input has had on decision making.



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