Annual State of NHSScotland Assets and Facilities Report for 2016

(Performance Update)





6th Edition

July 2017

Scottish Government
Riaghaltas na h-Alba
gov.scot

Contents

Page

Foreword

This sixth edition of the State of NHSScotland Assets and Facilities Report (SAFR) is now widely recognised as a key reference document used to inform decisions on the continuing investment in assets and facilities services to deliver the Scottish Government's "2020 Vision" for sustainable high quality in health. Getting the right assets and facilities services in place will be central to achieving the "2020 Vision" and supporting delivery of the new National Clinical Strategy for Scotland. Both are anticipated to require major change to the type and distribution of assets and facilities services and the way in which we prioritise investment in the future.

This year's report is an interim asset performance update report based on a new two year programme which alternates between a performance update report (this year), and a full report (next year) covering progress with all asset and facilities management issues and initiatives across NHSScotland.

This year's report thus focuses on monitoring and comparing year on year performance on a comprehensive basis across the totality of NHSScotland's assets and facilities services, and presents a detailed and rigorous scrutiny of asset performance. It also provides a range of information that should help Boards target limited resources on achieving maximum benefit and value for money from investment.

As in previous years, Boards have been highly supportive in recognising the importance of this report, and their willingness to provide information to support the detailed scrutiny of performance that underpins the report is to be commended.

.....

Calum Campbell
Chair of Assets & Facilities Programme Board
Chief Executive NHS Lanarkshire

.....

Christine McLaughlin
Director of Health Finance & Infrastructure
Scottish Government Health and Social Care Directorates

1.0 Performance of NHSScotland's Assets

This section of the report provides an overview of the current state of NHSScotland's assets whilst also reviewing asset and facilities services performance. The intention is to gain an insight into the significance of this asset base and also to appreciate where opportunities lie for improving performance.

The data used within this report is based on that currently available and reported from the beginning of the financial year 2016/17 i.e. April 2016. This includes:

- The latest asset performance information provided by NHS Boards in May 2016 covering property, office accommodation, vehicle and medical equipment assets.
- The latest facilities management costs published within the Scottish Health Service Cost Book (published in December 2015), covering NHS Boards' annual accounts for the reporting period 2014/15.
- PPP/PFI service charge costs from NHS Board's audited accounts for 2014/15.
- Information from NHSScotland's 2016 patient questionnaire survey which reports every two years.
- The limited available information on eHealth IM&T asset cost information, which was collated in 2012.

All 22 NHS Boards have contributed to this report by submitting their annual asset performance returns during May 2016.

All costs reported in this document include the impact of inflation but exclude the cost of VAT or other on-costs, unless specifically noted.

1.1 The Current Status of NHSScotland's Property Assets

The following provides an overview of the current status of NHSScotland's assets, with some comparative information on annual changes. More detailed information on the current status of property assets can be found in Annex A of this report.

Current status of NHSScotland's property assets			
Current Net Book Asset Value (all assets)	**2016**		
Property:	£5.6bn		
Other:	£0.6bn		
Total:	£6.2bn		
Floor Area ('000's sq.m)	**2014**	**2015**	**2016**
Total:	4,512	4,478	4,434
Age (% less than 50 years old)	**2014**	**2015**	**2016**
	74%	78%	77%
Condition (Good – category A or B)	**2014**	**2015**	**2016**
	58%	66%	70%
Estate Utilisation (Fully Utilised)	**2014**	**2015**	**2016**
	77%	81%	83%
Functional Suitability (Good – A or B)	**2014**	**2015**	**2016**
	65%	72%	69%
Backlog Maintenance	**2014**	**2015**	**2016**
Including Inflation uplift	£789m	£898m	£887m
Excluding inflation uplift		£809m	£763m

Most NHS Boards have reported a general improvement in the condition of their estate and utilisation of accommodation this year, along with a slight improvement in overall backlog maintenance. The change in functional suitability is mainly due to a reassessment of a small number of buildings across a few Boards.

1.2 The Current Status of NHSScotland's Vehicle Assets

The following provides an overview of the current status of NHSScotland's vehicle assets, with some comparative information on annual changes. More detailed information on the current status of vehicle assets can be found in Annex B of this report.

Current status of NHSScotland's vehicular assets

Number of Vehicles	**2014**	**2015**	**2016**
Owned*:	1,897	1,932	1,938
Leased:	2,178	2,516	2,264
Staff Car Scheme:	6,485	5,548	5,356
Long term hire:	198	155	222
Total:	**10,758**	**10,151**	**9,780**
Age (% less than 5 years old)	**2014**	**2015**	**2016**
	85%	83%	81%
Total Mileage (000's)	**2014**	**2015**	**2016**
Owned:	-	30,616	32,900
Leased**:	-	24,332	19,841
Staff Car Scheme**:	-	27,049	21,533
Private Car Business Travel:	-	51,690	51,093
Total:	-	133,688	125,368
Fuel Type	**2014**	**2015**	**2016**
Petrol:	-	21.9%	20.6%
Diesel:	-	77.7%	78.7%
Alternative:	-	0.4%	0.7%

* 65% of NHSScotland's owned vehicles belong to the Scottish Ambulance Service.
** The Leased figures and Staff Car Scheme figures do not include Long and Short Term Hire vehicles

The quality of information returned by NHS Boards on their vehicle assets has further improved this year again (but with scope for further improvement). This enables more information to be presented on the current state of these assets. The age profile of these assets suggest that they are in good condition and thus well maintained, with some Boards suggesting that vehicles beyond 5 years old are often due to their lower annual mileage enabling an extended life.

1.3 The Current Status of NHSScotland's Medical Equipment Assets

The following provides an overview of the current status of NHSScotland's medical assets, with some comparative information on annual changes. More detailed information can be found in Annex C of this report.

Current status of NHSScotland's medical equipment		
Replacement Cost*	**2015**	**2016**
Radiotherapy equipment	£66m	£65m
Imaging equipment	£269m	£271m
Renal dialysis equipment	£16m	£16m
Cardiac defibrillators	£20m	£20m
Flexible endoscopes	£84m	£78m
Infusion devices	£37m	£34m
Other high value equipment:	£440m	£438m
Other low value medical equipment	**n/a****	**£108m**
TOTAL:	**£932m**	**£1,030m**
Radiotherapy equipment (linear accelerators & CT simulators)	**2015**	**2016**
Number of items:	35	38
Proportion within minimum lifecycle age:	100%	100%
Imaging equipment	**2015**	**2016**
Number of items:	2,745	2,658
Proportion within minimum lifecycle age:	69%	70%
Cardiac Defibrillators	**2015**	**2016**
Number of items:	3,850	3,926
Proportion within minimum lifecycle age:	85%	78%
Infusion Devices	**2015**	**2016**
Number of items:	20,190	20,757
Proportion within minimum lifecycle age:	76%	73%

Current status of NHSScotland's medical equipment (cont'd)		
Flexible endoscopes	**2015**	**2016**
Number of items:	3,035	3,106
Proportion within minimum lifecycle age:	85%	81%
Renal Dialysis	**2015**	**2016**
Number of items:	944	980
Proportion within minimum lifecycle age:	66%	63%

* estimated cost of replacing all medical equipment, & leased / privately financed equipment
** n/a – represents comparative data not available in 2015

Medical equipment is a valuable asset both in monetary terms and in the important role it plays in the delivery of quality and safe healthcare across NHSScotland. The annual change in the replacement cost of medical equipment is mainly due to this year's addition of data for low value medical equipment (less than £5k for an individual item), which adds a further circa £100m. Improved information also makes it possible to report on the proportion of each type of equipment that is within the minimum recommended age before needing to consider its replacement (Proportion within minimum lifecycle age). This suggests that many of these categories of equipment are getting older, except radiotherapy and imaging equipment which have nationally coordinated replacement programmes to ensure that equipment is replaced within its minimum lifecycle age.

1.4 National Asset and Facilities Performance Framework

A key objective of this report is to monitor year on year change in asset and facilities services performance, and the National Asset and Facilities Performance Framework (below) has been used since first introduced in 2011 to provide an essential link between asset and facilities services performance and patient needs, as defined in the NHSScotland Quality Strategy's three Quality Ambitions.

The Framework uses 20 key performance indicators to monitor year on year progress in asset performance towards the achievement of the 2020 Vision targets. It should be noted that the 2020 Performance Targets are (a) aspirational and subject to review to reflect funding availability and the outcome of the work on the 2020 Visioning, and (b) based on the qualification that their attainment will not reduce service quality. Broadly, half of the KPIs are based on quality measures and half are based on cost measures.

		Performance Change 2015 to 2016				
	KPI No	Key Performance Indicator	2015 Performance	Current 2016 Performance	Percentage Change from 2015	2020 Vision Performance Target
Patient Centred	1	Percentage of properties categorised as either A or B for Physical Condition facet of estate appraisals	66%	70%	6%	90%
	2	Percentage of properties categorised as either A or B for Quality facet of estate appraisals	70%	68%	-3%	90%
	3	Positive response to Patient Questionnaire on patient rating of hospital environment	90%	92%	2%	95%
	4	Percentage of properties less than 50 years old	78%	77%	-1%	70%
	5	PAMS Quality Checklist Overall Score (max score 100)	75%	75%	0%	95%
Safe	6	Overall percentage compliance score from SCART	78%	72%	-7%	95%
	7	Cost per square metre for backlog maintenance	£185	£177	-4%	£100
	8	Significant and high risk backlog maintenance as percentage of total backlog expenditure requirement	44%	47%	7%	10%
Effective & Efficient	9	Percentage of properties categorised as either A or B for Functional Suitability facet of estate appraisal	72%	68%	-6%	90%
	10	Percentage of properties categorised as 'Fully Utilised' for space utilisation facet of estate appraisals	81%	83%	2%	90%
	11	Building Area sq.m per Consumer Week (from Cost Book)	3.50	3.65	4%	3.3
	12	Cleaning Costs £ per sq.m (from Cost Book)	42.36	43.75	3%	39.4
	13	Property maintenance costs £ per sq.m (from Cost Book)	34.67	31.46	-9%	28.3
	14	PPP Service Charge Cost £ per sq.m (from audited accounts & not Cost Book)	159.37	159.31	0%	143.4
	15	Energy Costs £ per sq.m (from Cost Book)	30.65	27.43	-11%	24.7
	16	Rates Costs £ per sq.m (from Cost Book)	12.76	13.31	4%	12.0
	17	Catering Cost £ per consumer week (from Cost Book)	87.23	86.82	-0.5%	78.1
	18	Portering Costs £ per consumer week (from Cost Book)	51.20	52.10	2%	46.9
	19	Laundry and Linen Cost £ per consumer week (from Cost Book)	32.80	24.26	-26%	21.8
	20	Waste Cost £ per consumer week (from Cost Book)	12.06	11.75	-3%	10.6
	1%	Denotes Performance Improvement				
	-1%	Denotes Performance Deterioration				
	0%	Denotes no change in performance				
	The "Current 2016 Performance" for KPI Nos 12 to 20 inclusive is based on the 2015 Cost Book information					
	Note: KPI No 7 has been adjusted to exclude inflation so that real performance can be compared.					
	KPI No 15 - Energy costs are outside the direct control of NHS Boards therefore reference is needed to Annex F to better understand energy consumption performance.					
	KPI No 19 includes laundry costs only, linen costs are no longer included					
	Figures and percentages have been rounded for ease of reporting purposes.					
	Percentage Change is the real percentage change and not percentage point change.					
	'Percentage of properties' indicators are based on overall floor area, unless otherwise stated.					
	Cost based indicators are affected by external influences such as inflation, as well as performance.					

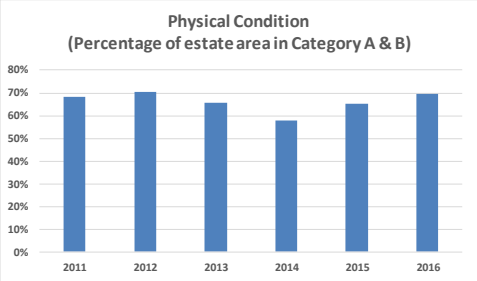
Annual changes to these KPIs are further explained in the following section.

1.4.1 Changes in National Asset Performance Framework KPIs

The following provides an overview of performance change between 2011 (when the performance framework was first developed) and 2016, along with a short commentary on the changes.

KPI Nos 1 to 10 – Derived from property appraisal information and PAMS provided by Boards

(Note: 'Percentage of properties' indicators are based on floor area, unless otherwise stated).

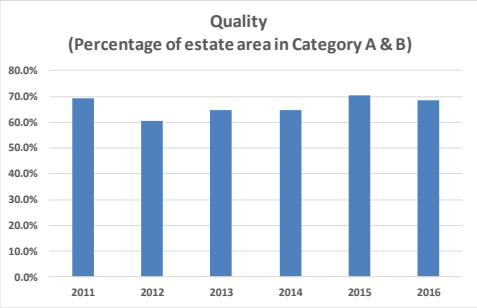


Physical Condition

Over that last three years there has been a steady improvement in the reported physical condition of the estate. Contributions to this improvement includes:

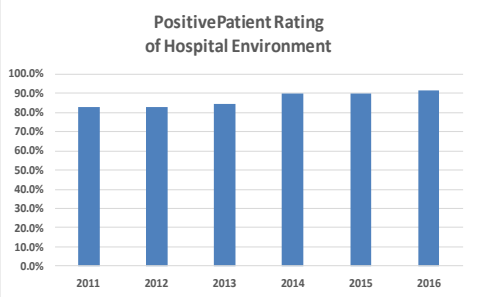
- Completion of the Queen Elizabeth University Hospital in Glasgow.
- The substantial programme of new primary & community care facilities across Scotland.
- Improvements made to the retained estate.
- And, other new building facilities across Scotland.

Over the next 5+ years, NHSScotland's asset investment programme is expected to deliver further new and modernised estate to replace or improve on outdated accommodation.



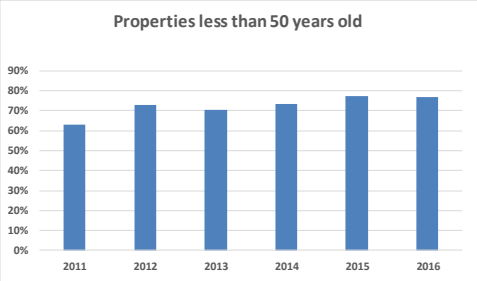
Quality

This facet tends to show a broad correlation with the physical condition facet, but indicates a small decrease this year. Over the next few years it is expected to improve in line with physical condition as investment in new facilities is implemented.



Patient Rating of the Hospital Environment

There has been a gradual rise in this indicator of patients' opinion on the quality of the hospital environment. Patients with a positive response to their environment whilst in hospital have reached 92% for the first time in 2016. This is an extremely encouraging response rate.

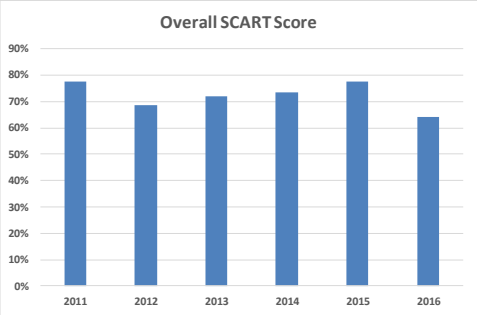


Properties less than 50 Years Old

The proportion of properties less than 50 years old has steadily improved over the full reporting period which is indicative of the substantial investment programme that has taken place over that period. This indicator has however remained relatively static over the last 12 months.

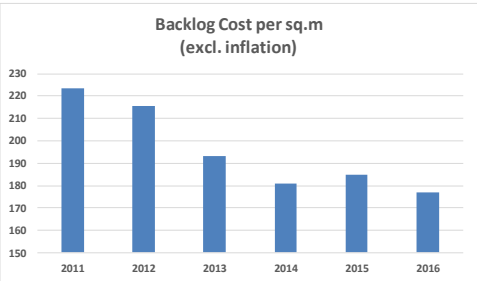
Future investment projects are expected to compensate for a naturally aging estate to support continued improvement in this indicator, which includes:

- The new Dumfries Hospital.
- The new Balfour Hospital in Orkney.
- The new Elective Centres programme across Scotland.
- The new Royal Hospital for Sick Children in Edinburgh.
- The new Baird Family Hospital and Anchor Centre in Aberdeen.
- The programme of investment in primary care facilities.
- And several other important investment projects which will replace old and outdated accommodation.



Overall percentage compliance score from SCART

SCART is a self-assessment tool that indicates general compliance with policies and procedures related to property aspects of statutory compliance. This tool has recently been expanded to cover a wider question set and, as it begins to be adopted, is the reason why there is a temporary dip in the indicator this year.

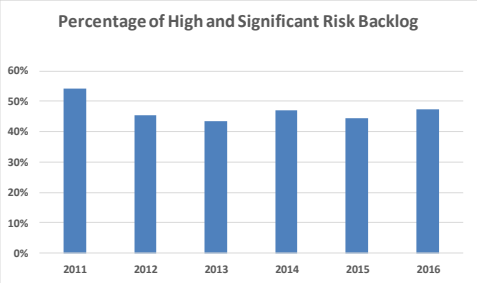
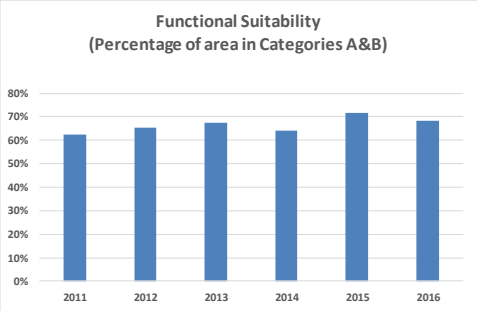
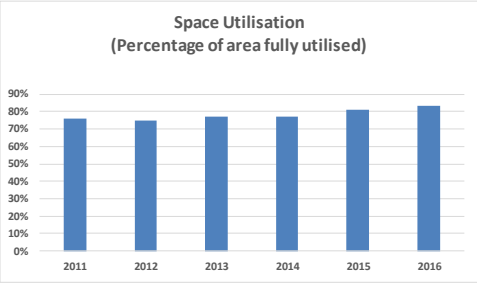


Backlog Maintenance Cost per sq.m.

This indicator excludes the impact of inflation to provide a more realistic indictor of performance in reducing the proportion of backlog maintenance within the current estate.

Backlog per square metre has reduced by circa 21% since 2011, which includes a further reduction over the last 12 months. This reflects the continued focus on reducing backlog maintenance.

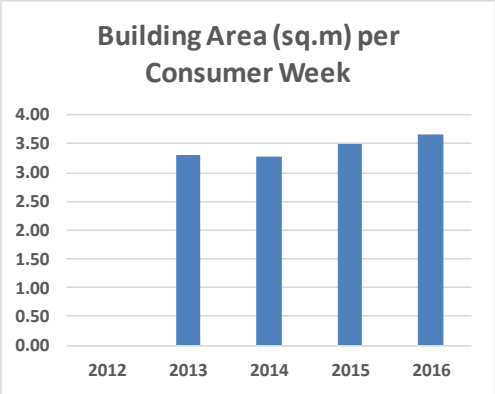
Section 1.4.3 provides further details on the current status and movement of reported backlog maintenance.

	**Proportion of Significant & High Risk Backlog Maintenance** The main impact on this indicator this year has been the identification of infrastructure maintenance works needed at Ninewells Hospital in NHS Tayside, which has mainly been assessed as either Significant or High risk. Most other Boards have managed to reduce this category of backlog maintenance this year.
	**Functional Suitability** The change in this indicator for 2016 has mainly been a result of a reconfiguration and/or reassessment of parts of NHS Boards' estate. The programme of new investment projects to be delivered over the next 5 years should help to improve this indicator in future years as it delivers modern, service designed accommodation.
	**Fully Utilised Space** The efficient use of NHSScotland's estate continues to improve as shown by this indicator. Also, the accompanying reduction in overall floor area suggests an effective rationalisation programme is taking place following completion of new facilities.

KPI Nos 11 to 20 - Cost Book Derived KPIs

Note: 2016 SAFR Cost Book data is based on financial information for financial year 2014/15

As part of the measures to improve the quality and consistency of data, the unit of measurement for building size was changed from 100 cu.m to sq.m in the 2012 Cost Book. Therefore, comparisons can only be made for the last four years on these KPIs.

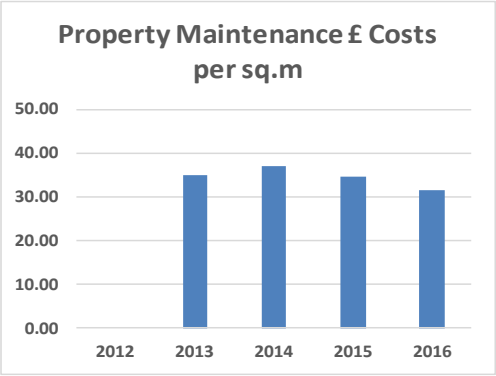


Space Utilisation - Building Area per Consumer Week

This indicator shows the hospital estate floor area relative to inpatient service activity. The SAFR 2016 data is based on reported cost information for 2014/15 which was a transition year for Glasgow as it introduced its major new hospital in South Glasgow before then being able to remove the associated redundant estate. This is a key reason why this indicator has increased this year.

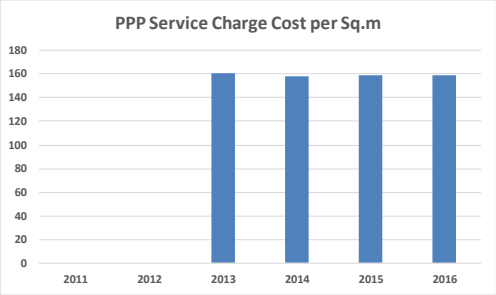
Cleaning Costs

Higher cleaning standards as a response to increased HAI standards of cleanliness, increased activity and usage of space, and normal inflationary / salary cost pressures have all impacted on this KPI. However, this seems to be offset by efficiency performance improvements which have reduced such increases to below inflation levels.



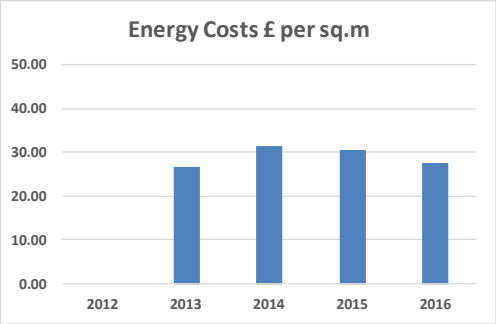
Property maintenance costs

Property maintenance costs have reduced slightly this year which is mainly as a result of varying revenue spend on backlog maintenance included in the expenditure figures for property maintenance.



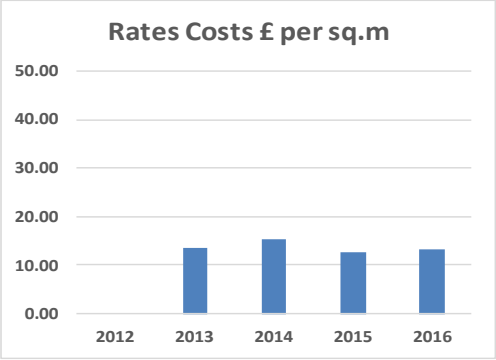
PPP – Service Charge Costs

This KPI shows only the service charge element of PPP/PFI operating costs taken from NHS Boards' audited accounts (i.e. not from Cost Book information). It doesn't include interest or recharge payment elements of a unitary charge. The 2016 KPI shows very little change from that reported last year despite any inflationary pressures.



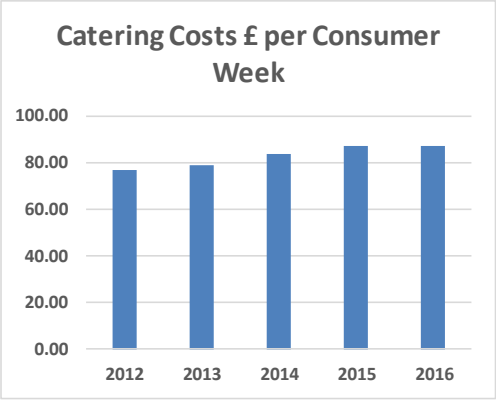
Energy Costs

This KPI shows a slight reduction in energy costs per square metre over the last year which is mainly as a result of reduced energy consumption during a year of generally milder temperatures. However, as energy cost changes are outside the direct control of NHSScotland then energy efficiency improvements are the main measure for reducing consumption and thus overall costs. Further information on energy performance is provided in Annex D.



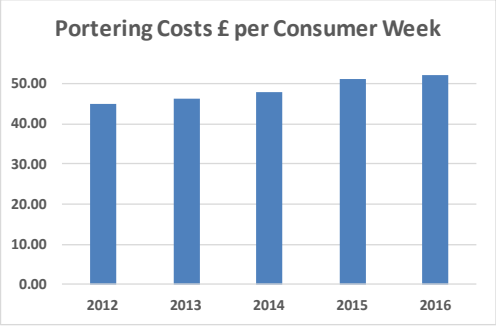
Rates Costs

Rates are generally index linked to inflation which is the main reason behind the small increase in this indicator.



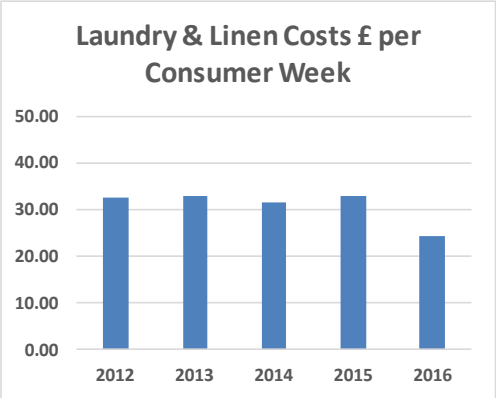
Catering Cost £/consumer week

This KPI shows a steady increase in catering costs per consumer week over the five year reporting period during which time patient choice and food quality have both improved. The cost impact of these improvements in service delivery seems to be offset by efficiency performance improvements as the costs increases are generally lower than inflation over the same period.



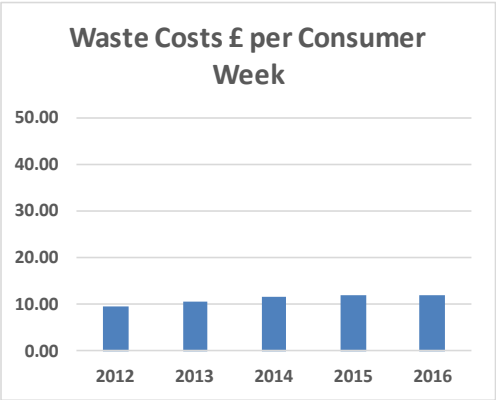
Portering Costs

Boards explain that their Portering service is being used to carry out additional tasks in order to reduce pressures on front-line staff and the need for additional security staff in some instances. This is a key reason why the cost per consumer week has steadily risen since 2012.



Laundry (& Linen) Costs

Laundry & linen costs have generally remained the same since 2011, despite inflationary pressures. However, the reduction in this indicator for 2016 is mainly due to a change in reporting of this cost as it no longer includes the cost of linen i.e. it now only includes laundry costs. Efficiency measures such as the move from conventional linen to fitted bedding have helped to control any cost increases.



Waste Costs

The cost associated with increased regulation on clinical waste and stricter controls over the segregation and disposal of waste have both put pressure on overall waste costs since 2012.

The scale of the above cost charts has, when convenient to do so, been kept at 0 - 50 to enable comparison of the scale of costs between charts.

The Strategic Review of Soft Facilities Management Services Programme and the Facilities Shared Services Review are both carrying out strategic reviews of FM services across NHSScotland to identify further improvements and efficiencies that can be made to these services.

It should be noted that a number of the above Cost Book derived KPIs use “consumer weeks” as the denominator in the KPI. This is primarily a measure of inpatient activity however it also takes some account for day patient activity. Studies have shown that it is primarily inpatient activity which drives the numerator in each of these KPIs i.e. the two variables in each of these KPIs are highly correlated.

1.4.2 Performance variation across Boards

The Performance Framework is intended to provide a useful “national picture” of performance on a range of asset and facilities management services. The tables that follow compare each Board’s performance on each of the 20 KPIs in the Framework. However, it should be recognised that comparisons between NHS Boards should be treated with some caution because:

- The size and scope of each Board’s estate has historically developed in different ways over time.
- Increased spending can be a result of an improvement initiative.
- Boards may use different service delivery models to suit local circumstances i.e. number and type of duties carried out by domestic services staff may vary from site to site.
- Smaller Boards will be unable to achieve the economies of scale evident in the larger Boards.
- There are different specifications between Boards in the scope of each service.
- Allocation of costs between services and sites may not be uniform.
- Annual variances in non-recurring expenditure may distort operational KPIs i.e. expenditure on backlog incorporated within annual property maintenance costs.
- The introduction of new initiatives which improve performance take time to implement across NHSScotland.
- Clinical complexity / specialist services vary between hospitals and may drive cost differentials i.e. specialist clinical activity may result in higher clinical waste quantities and costs.
- Differences in pay and supplies costs across geographic areas i.e. some Boards may incur higher cost arising from remote and rural locations.

NHS Board	Properties categorised as either A or B for Physical Condition	Properties categorised as either A or B for Quality	Positive response on patient rating of 'hospital environment'	Percentage of properties less than 50 years old	PAMS Quality Checklist Score (%) - 2015 scores	Overall compliance score from SCART	Cost per square metre for backlog maintenance	Percentage of significant and high risk backlog maintenance	Properties categorised as either A or B for Functional Suitability	Pproperties categorised as 'Fully Utilised' for space utilisation
NHS Greater Glasgow & Clyde	70%	52%	87	80%	72%	79%	230	61%	56%	96%
NHS Lothian	55%	69%	89	61%	83%	75%	91	72%	70%	73%
NHS Tayside	82%	92%	93	76%	69%	14%	204	72%	82%	84%
NHS Grampian	66%	74%	92	63%	84%	59%	333	19%	72%	92%
NHS Fife	86%	74%	91	74%	71%	87%	171	39%	84%	83%
NHS Ayrshire & Arran	50%	82%	89	74%	80%	37%	314	21%	84%	66%
NHS Lanarkshire	92%	76%	85	91%	78%	91%	128	41%	74%	95%
NHS Highland	37%	46%	94	97%	61%	63%	232	34%	31%	43%
NHS Forth Valley	82%	80%	91	91%	75%	70%	78	18%	84%	95%
NHS Dumfries & Galloway	63%	51%	91	69%	80%	70%	551	56%	58%	48%
NHS Borders	98%	67%	83	95%	71%	89%	87	28%	63%	99%
NWTCB - Hospital	96%	93%	100	100%	72%	90%	7	0%	93%	80%
Western Isles	93%	99%	98	88%	75%	95%	12	32%	98%	97%
The State Hospital	100%	100%	-	98%	72%	95%	214	100%	100%	88%
NHS Shetland	53%	71%	98	48%	80%	65%	78	36%	75%	97%
NHS Orkney	24%	75%	92	60%	74%	77%	703	20%	49%	53%
NHS Board Average 2016*:	**69%**	**68%**	**92**	**77%**	**75%**	**72%**	**206**	**47%**	**68%**	**83%**

The size, scope and historical development of each Board's estate influences the 2011 starting performance base indicator and thus continues to impact on Boards' variation from the NHS Board Average.

Backlog in this table includes the cost impact of inflation.

The NHS Board Average 2016 excludes NHS Special Boards*

The PAMS Quality Checklist score is now only carried out every two years when Boards submit their full PAMS, hence, the 2015 scores are recorded in the above table.

NHS Board	Building Area sq.m per Consumer Week	Cleaning Costs £ per sq.m.	Property maintenance costs £ per sq.m	PPP Serivce Charge Costs £ per sq.m (from annual accounts)	Energy Costs £ per sq.m	Rates Costs £ per sq.m	Catering Cost £ per consumer week	Portering Costs £ per consumer week	Laundry & Linen Cost £ per consumer week	Waste Cost £ per consumer week
NHS Greater Glasgow	3.9	37.6	23.6	68.0	28.0	11.2	80.5	59.6	15.4	10.2
NHS Lothian	3.5	43.5	29.6	175.0	27.8	12.5	92.7	50.4	23.7	8.7
NHS Tayside	5.0	37.3	27.6	0.0	23.1	12.3	82.2	68.4	23.0	7.9
NHS Grampian	3.5	66.6	34.5	131.0	33.5	15.8	72.1	56.4	19.4	14.2
NHS Fife	4.2	37.4	22.4	71.0	16.4	12.9	83.1	48.7	26.7	10.9
NHS Ayrshire & Arran	3.0	43.5	41.5	122.0	23.5	11.4	87.9	63.7	38.3	11.3
NHS Lanarkshire	2.2	49.1	63.5	285.0	27.4	15.9	95.8	34.0	37.7	15.4
NHS Highland	4.7	47.1	24.2	181.0	28.4	13.5	104.1	45.3	27.9	13.0
NHS Forth Valley	3.0	44.7	44.1	193.0	31.7	20.4	91.7	33.1	27.3	18.0
NHS Dumfries & Galloway	3.0	61.3	44.0	42.0	29.5	14.4	104.6	27.0	34.7	24.7
NHS Borders	2.9	46.2	44.2	0.0	28.8	16.7	70.7	25.5	22.8	2.0
Golden Jubilee	7.6	27.1	39.8	0.0	39.1	18.4	89.0	70.2	53.0	42.3
State Hospital	3.7	53.4	35.2	0.0	30.7	23.7	114.0	22.3	7.1	4.0
NHS Western Isles	3.5	41.4	46.0	0.0	45.4	25.7	123.3	39.5	40.4	21.0
NHS Shetland	3.5	77.7	78.7	0.0	64.3	20.7	191.9	110.6	39.1	16.8
NHS Orkney	3.0	77.6	85.4	0.0	43.0	23.9	102.4	50.3	-0.9	17.7
NHS Scotland 2014/15 Cost Book Average	3.65	43.75	31.46	159.31	27.43	13.31	86.82	52.10	24.26	11.75

Comparisons between NHS Boards should be treated with some caution for the reasons outlined at the beginning of this section.

Cost information is sourced from the latest Cost Book data for 2014/15.

PPP Service Charge Costs are derived from Boards annual accounts and their proportion of PPP accommodation.

1.4.3 Current status of Backlog Maintenance

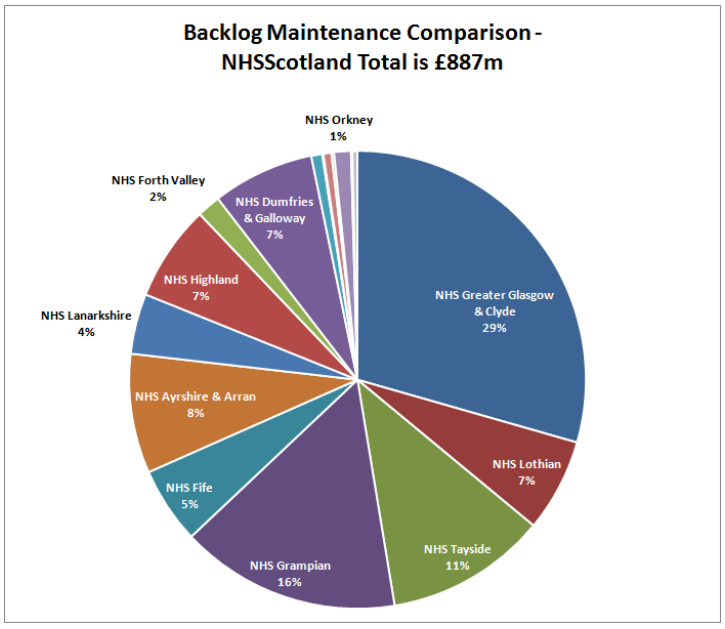
The current backlog maintenance expenditure requirement is the base cost required to bring those parts of the existing estate which are currently not in satisfactory condition, back to Condition B (satisfactory). It is, however, only a singular reference to understanding the current state of the estate and should not be considered in isolation to other important indicators such as the physical condition, age, and functional suitability of available accommodation; as described earlier in the National Asset and Facilities Performance Framework.

The 2016 backlog maintenance expenditure requirement is reported as £887m, which is a decrease of circa £11m since 2015. When the impact of inflation on costs is excluded from this indicator, the reduction in backlog maintenance has been circa £45m. Contributors to this reduction include:

- NHS Greater Glasgow & Clyde: (£23m).
- NHS Lanarkshire: (£14m).
- NHS Lothian: (£13m).
- NHS Grampian: (£12m).
- NHS Fife: (£8m).

The main increase in backlog is seen at NHS Tayside, who have identified the need to invest in the engineering service infrastructure at Ninewells Hospital, which has increased their reported figure by £27m (excluding inflation).

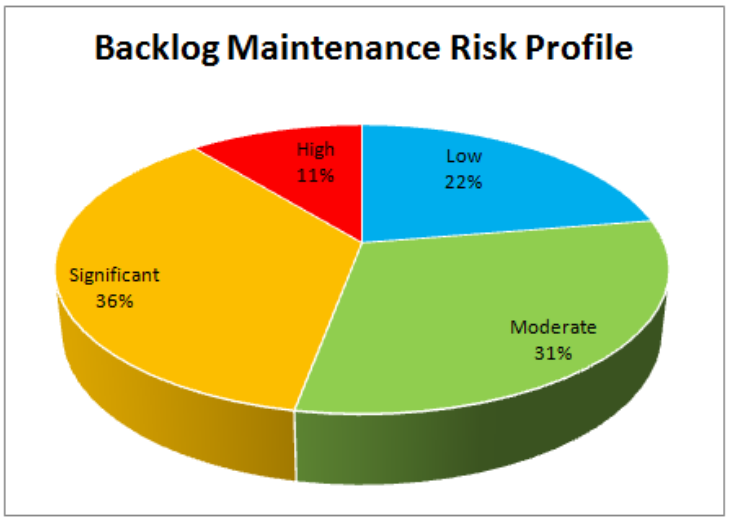
The following chart provides a breakdown of the current total £887m of backlog maintenance across each NHS Board:



Note: the above chart includes all 22 NHS Boards and Special NHS Boards but those whose backlog is below 1% have not been separately identified for clarity of presentation reasons only.

Improved asset management practice introduced since 2010 requires that all identified backlog maintenance is risk assessed so that appropriate mitigation actions can be implemented and maintenance activity can be logically planned and prioritised. This provides the necessary governance arrangements to enable the expected life of property elements to be extended and backlog to be managed in a safe and financially sustainable manner.

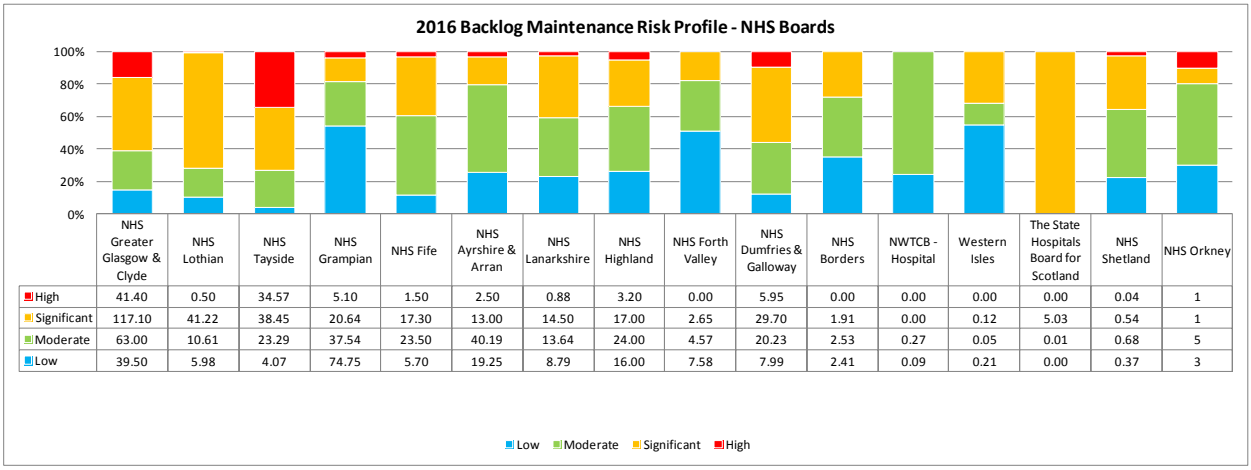
The total backlog in the estate has been risk assessed and the results of this are shown in the chart that follows.



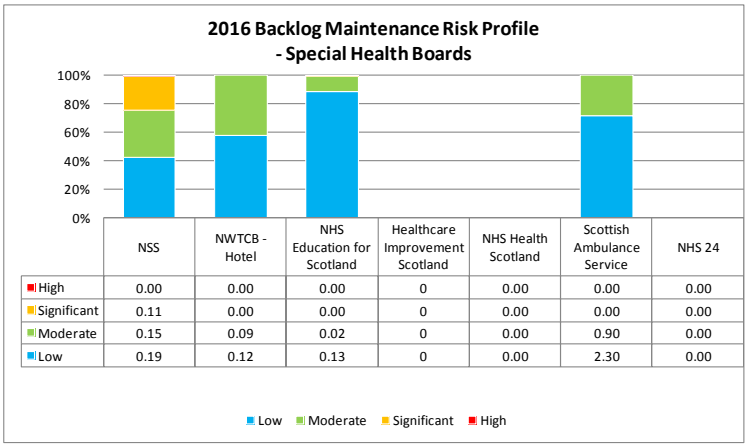
The proportion of Significant and High risk backlog maintenance has increased from 44% reported in 2015 to 47% reported this year. This is mainly attributable to the increase in Significant and High risk backlog reported by NHS Tayside (as discussed above). Most other Boards have either maintained or improved on this indicator which demonstrates that they are continuing to address this issue.

NHS Boards are continuing to review their current risk assessments to ensure that they appropriately reflect the level of risk to service and business continuity once adequate mitigation actions have been introduced to manage these risks. This has the potential of reducing the current risk profile of outstanding backlog maintenance.

The variation in risk profile across the different NHS Boards is highlighted in the following table:



	NHS Greater Glasgow & Clyde	NHS Lothian	NHS Tayside	NHS Grampian	NHS Fife	NHS Ayrshire & Arran	NHS Lanarkshire	NHS Highland	NHS Forth Valley	NHS Dumfries & Galloway	NHS Borders	NWTCB - Hospital	Western Isles	The State Hospitals Board for Scotland	NHS Shetland	NHS Orkney
High	41.40	0.50	34.57	5.10	1.50	2.50	0.88	3.20	0.00	5.95	0.00	0.00	0.00	0.00	0.04	1
Significant	117.10	41.22	38.45	20.64	17.30	13.00	14.50	17.00	2.65	29.70	1.91	0.00	0.12	5.03	0.54	1
Moderate	63.00	10.61	23.29	37.54	23.50	40.19	13.64	24.00	4.57	20.23	2.53	0.27	0.05	0.01	0.68	5
Low	39.50	5.98	4.07	74.75	5.70	19.25	8.79	16.00	7.58	7.99	2.41	0.09	0.21	0.00	0.37	3



	NSS	NWTCB - Hotel	NHS Education for Scotland	Healthcare Improvement Scotland	NHS Health Scotland	Scottish Ambulance Service	NHS 24
High	0.00	0.00	0.00	0	0.00	0.00	0.00
Significant	0.11	0.00	0.00	0	0.00	0.00	0.00
Moderate	0.15	0.09	0.02	0	0.00	0.90	0.00
Low	0.19	0.12	0.13	0	0.00	2.30	0.00

Although backlog is identified as an expenditure requirement, in practice it is likely to be addressed by a combination of:

- Estate rationalisation and disposal of older properties avoiding the need for expenditure on backlog. The scope of planned disposals over the next 5 years is outlined in Section 3.
- Replacing older properties with new facilities and avoiding the need for expenditure on backlog e.g. the estate rationalisation following the completion of the Queen Elizabeth University Hospital in Glasgow and further estate rationalisation once the new hospital replacement projects are completed in Dumfries and Orkney.
- Incorporating backlog works within major redevelopment, modernisation and refurbishment projects.
- Undertaking specific projects to target the high and significant backlog.
- Incorporating backlog work within operational repair and cyclical maintenance.

These strategies have been used to reduce the backlog maintenance expenditure requirement since a total figure of £1,010m was first reported in the 2011 SAFR. The following table provides a summary of the progress that NHS Boards have made in reducing this backlog between 2011 and 2016 (i.e. excluding inflationary cost adjustments and any additional newly reported backlog in that period):

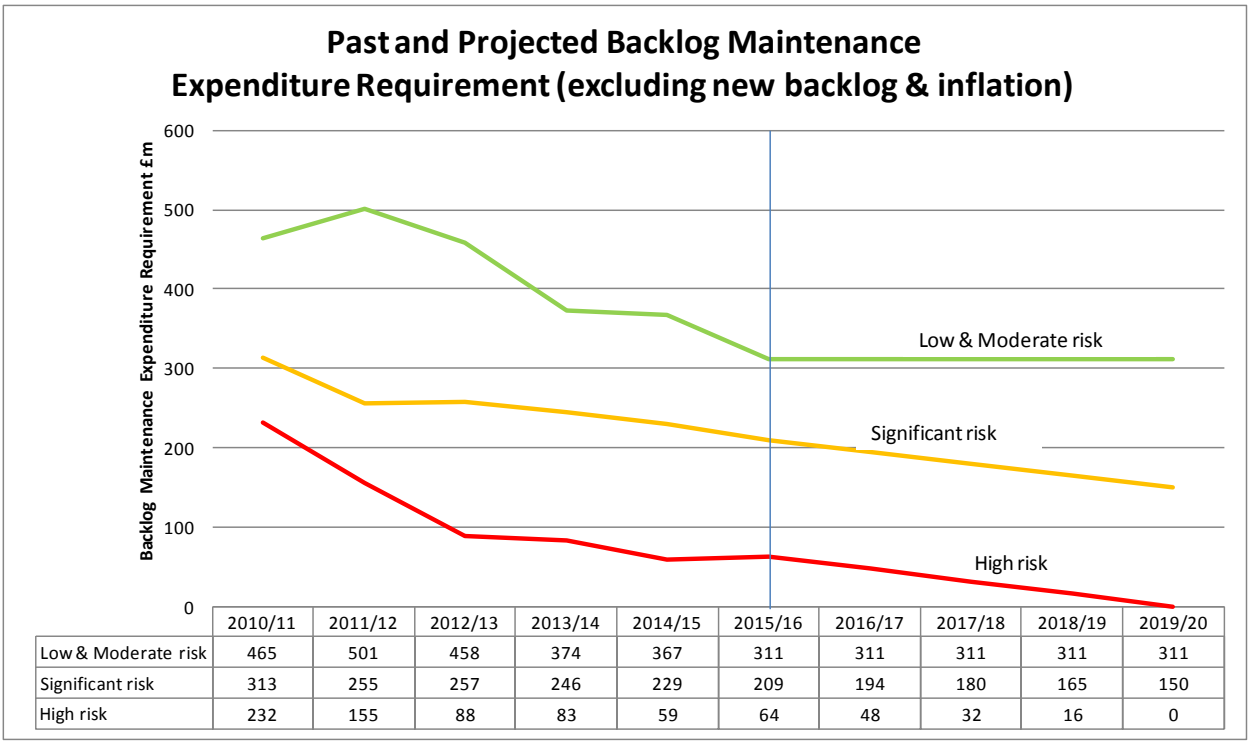
SAFR Reporting Year	Change to backlog costs since originally reported in 2011 SAFR (£m)
2011	1010
2012	911
2013	803
2014	702
2015	655
2016	584

The table shows that NHSScotland has been able to successfully reduce the backlog maintenance expenditure requirement identified in 2011 by £426m to a current total of £584m in 2016. However, as identified earlier, the total backlog expenditure requirement reported by Boards in 2016 is £887 million which takes account of the impact of inflation on maintenance costs as well as additional newly identified backlog over the same period. Hence, the backlog reported by Boards in any one year is a total figure which incorporates both the impact of their investment to reduce the backlog identified in previous years and any new backlog and cost adjustments identified within the year.

It should also be recognised that newly identified backlog in buildings and engineering systems is an inevitable consequence of aging buildings that occurs as a result of:

- Building and engineering elements coming to the end of their operational life, which can vary significantly depending on the element – engineering components and systems can have relatively short operational lives with most requiring replacement within 20 years whereas building elements tend toward longer operational lives of up to 60 years.
- Variations in normal day to day operational usage which can result in shorter than expected operational lives of elements and in some cases unpredicted failure of systems and the need for earlier than expected replacement.

The following chart uses the original backlog figure reported in the 2011 SAFR to track the actual annual change in this backlog (i.e. excluding the impact of newly reported backlog or inflation) up to 2015/16, and then plots the future reductions needed to meet the aspirational target of reducing this total to below £500m by 2020 with no outstanding High risk backlog maintenance:



	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Low & Moderate risk	465	501	458	374	367	311	311	311	311	311
Significant risk	313	255	257	246	229	209	194	180	165	150
High risk	232	155	88	83	59	64	48	32	16	0

* excluding newly reported backlog & inflation

The chart shows that the reductions in backlog this year (2015/16) is generally in line with that forecast necessary to achieve the aspirational target for 2019/20. However, continued focus will be needed if NHS Boards are to eliminate all High risk backlog within that period. Also, in future years the growing level of new backlog will need to be incorporated into property improvement plans.

It is recognised that in practice new build and refurbishment / upgrade schemes will inevitably reduce all categories of risk assessed backlog when, for instance, this backlog is in the same building/area in which the high and significant risk backlog is present; hence, it is accepted that some reduction in low and moderate risk backlog will continue to take place in parallel with the reductions in high and significant risk backlog and is a practical consequence of undertaking improvement works in buildings.

Whilst this analysis and projections of future backlog provides a high level indication of how backlog might be reduced over the next few years, it needs to be recognised that in practice it is very difficult to accurately project changes in backlog in existing buildings, and timings for estate rationalisation can be influenced by a number of factors including operational priorities and market forces (in relation to disposals).

1.4.4 Asset Performance for Office Accommodation

The NHSScotland Smarter Offices Programme was established in October 2013 with the aim of supporting improved utilisation of office accommodation across the NHS estate by supporting NHS Boards and Special Boards in the development of a strategic approach to their office accommodation. This expected to gain the following benefits:

- Provision of affordable support accommodation to the NHS that is better able to respond to future changes in strategic direction
- Improved quality of working environment which facilitates the retention and recruitment of staff
- Improved availability of staff welfare facilities promoting positive staff morale.
- Flexible, well designed, efficient space that is able to cope with uncertainty around future property needs, support opportunities to change working practices, and introduce new technology
- Supporting Scottish Government environmental sustainability agendas through the appropriate procurement, design and operation of its property assets.
- Maximised opportunities for staff to develop and deploy their knowledge, skills and personal qualities creatively to add value to the organisation.
- More integrated/collaborative working and thereby encourage better use of skills and resources.
- Synergies from shared use of accommodation and support services.

By drawing on wider research undertaken by UK Government, the Programme has developed a set of performance measures covering workplace standards and benchmarks which this report has adopted as the Office Performance Framework. This includes setting a benchmark of 8sq.m. per Whole Time Equivalent (WTE) (i.e. space per person) for new and refurbished office space and 10sq.m. per WTE for all other office accommodation. It also includes a Desk to WTE of 80% (i.e. desks per person).

The tables over the page show NHS Boards' position in relation to these benchmarks, as well as the annual change in costs associated with this accommodation type. For territorial health boards the space standards have improved over the last 12 months with the space per WTE changing from 14.5 sq.m. to 12.7 sq.m., and the desk to WTE ratio changing from 104% to 98%. Variance across Boards suggests scope for even further improvement in these indicators. Across all NHS Boards, the total occupancy cost per net internal area has reduced slightly from £194 to £190 per sq.m. Each of these indicators suggests that NHS Boards are improving the effective utilisation of this accommodation type but this will continue to be monitored to ensure ongoing cost effectiveness.

NHS Board	Space Standard (sq.m NIA)		Desk to WTE/ FTE %	Accommodation Budget Costs inc VAT: 2014/15							Annual Change
	WTE/ FTE	Desks		Rent £ per m2 NIA	Rates £ per m2 NIA	Service Charge £ per m2 NIA	Hard FM £ per m2 NIA	Soft FM £ per m2 NIA	Energy £ per m2 NIA	Total Costs £ per m2 NIA	Total Costs £ per m2 NIA
NHS GG&C	12.2	14.1	86%	40	22	0	19	16	21	119	-1%
NHS Lothian	12.4	10.7	116%	113	48	19	4	39	23	246	-8%
NHS Tayside	13.6	13.4	101%	133	18	0	22	53	27	253	51%
NHS Grampian	13.7	13.0	105%	44	48	0	24	16	39	171	11%
NHS Fife	13.8	13.5	102%	7	12	0	0	1	16	36	-45%
NHS Ayrshire & Arran	15.0	13.1	114%	30	18	0	9	6	7	71	-4%
NHS Lanarkshire	5.4	6.8	80%	0	27	0	22	3	18	77	-2%
NHS Highland *	9.8	9.4	105%	108	57	2	3	5	25	200	-14%
NHS Forth Valley	16.7	16.4	102%	52	28	11	24	13	21	149	-7%
NHS Dumfries & Galloway	18.5	20.9	88%	15	10	0	14	12	20	70	-1%
NHS Borders	13.0	10.4	125%	21	36	0	6	12	31	106	9%
NHS Western Isles	9.5	9.2	103%	34	64	0	5	62	11	176	-10%
NHS Shetland	11.8	11.8	100%	5	18	0	1	4	24	53	-8%
NHS Orkney	9.5	7.5	126%	156	68	0	6	11	15	255	-6%
NWTC/Golden Jubilee	10.7	9.7	110%	0	26	0	36	70	43	175	2%
The State Hospitals Board	12.2	11.7	104%	0	125	0	46	29	92	292	246%
NHS BOARD TOTAL / AVERAGE	**12.7**	**13.0**	**98%**	**46**	**28**	**3**	**15**	**17**	**22**	**131**	**2%**

NHS Special Board	Space Standard (sq.m NIA)		Desk to WTE/FTE %	Accommodation Budget Costs inc VAT: 2014/15							Change
	WTE/ FTE	Desks		Rent per m2 NIA £	Rates per m2 NIA £	Service Charge per m2 NIA £	Hard FM per m2 NIA £	Soft FM per m2 NIA £	Energy per m2 NIA £	Total Costs per m2 NIA £	Total Costs per m2 NIA £
NHS National Services Scotland	9.1	9.0	101%	240	78	11	22	29	36	416	1%
NHS Education for Scotland	10.2	9.1	112%	195	98	79	0	8	15	396	0%
Healthcare Improvement Scotland	11.1	10.1	110%	246	90	40	21	39	23	458	0%
NHS Health Scotland	10.3	10.9	94%	287	94	0	25	29	38	473	0%
Scottish Ambulance Service	10.9	12.8	85%	100	55	3	16	43	24	243	18%
NHS 24	6.7	9.6	70%	145	57	17	25	41	60	345	-9%
SPECIAL NHS BOARD TOTAL/AVERAGE	**9.0**	**9.5**	**94.9%**	**211**	**78**	**23**	**19**	**30**	**35**	**395**	**-0.1%**

NHS SCOTLAND TOTAL/AVERAGE										
All NHS Boards	Space per WTE	Space per desk	Desk to WTE	Rent / sq.m	Rates / sq.m	Service Charge / sq.m	Hard FM / sq.m	Soft FM / sq.m	Energy Cost / sq.m	Total Cost / sq.m
2016	12	12	97%	83	39	7	16	20	25	190
2015	13	13	101%	87	39	8	19	18	24	194

2.0 The Annual Cost of Assets and Facilities Services

The revenue and lifecycle costs associated with asset ownership and use represent a considerable proportion of NHSScotland budgets. This section of the report provides a summary of the annual cost (based on 2014/15 Cost Book data) of asset ownership and facilities management services. Whilst this section provides some comparative information on annual changes, more detailed information on performance trends was described earlier in Section 1.4.

2.1 Property Assets and Facilities Services - Annual Costs

There are significant annual revenue costs that are directly associated with property asset ownership including:

- Property Maintenance - regular day to day maintenance including revenue expenditure on backlog but excluding major capital expenditure on upgrading/refurbishment and backlog works)
- Energy
- PFI Facilities Management Costs (primarily Hard FM)
- Rent and Rates
- Cleaning

There are also a range of facilities management services costs that are closely associated with property asset ownership including:

- Catering
- Portering
- Laundry and linen
- Waste disposal

The annual property and facilities services costs for the last three years, and which are within the scope of the SAFR, are shown in the table that follows (excludes Special Boards and the non-hospital estate).

	Annual Property Asset and Facilities Services Expenditure (£m)			
	2012/13 (£m)	2013/14 (£m)	2014/15 (£m)	Percentage Change 13/14 to 14/15
Property Maintenance (capital and revenue costs)	123.5	119.1	115.4	-3%
Cleaning	119.8	122.1	126.5	4%
PFI Facilities Management Costs	117.7	115.9	118.6	2%
Catering	84.9	85.6	87.2	2%
Energy	104.7	105.2	100.6	-4%
Rent	14.6	19.9	21.0	6%
Rates	50.9	43.8	48.8	11%
Portering	48.6	50.3	52.33	4%
Laundry only	32.1	32.2	24.4	-24%
Waste Disposal	11.8	11.8	11.8	0%
Total	**708.7**	**706.1**	**706.6**	**0%**
	Annual Change	**-0.4%**	**0.1%**	

Note: The above table excludes depreciation on property asset; costs associated with Community and Family Health Services, and energy costs exclude costs associated with environmental taxes and levies e.g. EU ETS Payments. Further details relating to energy costs are provided in Annex D.
Laundry costs are affected by changes to reporting requirements which no longer includes linen costs.

The largest cost contributors of property maintenance, cleaning, PFI FM costs, catering, and energy account for 78% of these costs, which together remain generally unchanged between 2013/14 and 2014/15, which is also mirrored in the overall costs.

Previous work on SAFR has identified that these property assets and facilities services costs are primarily (but not exclusively) driven by building size (volume/area) and patient activity (as measured by consumer weeks). The change in these primary cost drivers, and the number of hospitals, is shown in the table that follows.

	2013/14	2014/15	Percentage Change 2013/14 to 2014/15
Number of hospitals	220	216	-1.8%
Building Area used for measuring cleaning costs (million sq.m)	2.88	2.89	0.3%
Consumer weeks (millions) (in-patient activity)	0.98	1.00	2.3%
Annual Property Asset and Facilities Services Costs (£millions)	706.1	706.6	0.1%

The table shows that the relatively unchanged overall cost is at a time when reported cleaning floor areas and inpatient activity (consumer week) have increased slightly.

2.2 Vehicles – Annual Costs

NHSScotland's estimated annual expenditure on its vehicles assets, as indicated through NHS Board information returns, is shown in the table below.

Annual Expenditure on Vehicle Assets				
Description	**£m**	**% of Total**	**No. of Vehicles**	**Average per Vehicle**
Insurance & accident costs (net cost)	6.00	11.5%	9,780	£614
Fuel costs	11.40	21.8%	9,780	£1,163
Maintenance & servicing costs - owned vehicles	8.01	15.4%	1,938	£4,135
Leased vehicle costs (including maintenance)	6.53	12.6%	2,264	£2,886
Hired vehicle costs	1.15	2.2%	222	£5,178
Staff car scheme lease costs (including maintenance & mileage claims)	19.00	36.5%	5,356	£3,547
Staff contribution towards private use	(9.81)	-	5,356	(£1,831)
Total Net Costs 2016	**42.26**	100%	9,780	**£4,321**
Total Net Cost 2015	42.55			£4,191

Note: excludes depreciation on owned fleet.

In addition to the above, many NHSScotland staff use their private vehicles for official business and claim fuel and running costs of circa £24.5m through expenses claims.

The annual change in total expenditure on vehicle assets includes lower staff car scheme costs as the number of cars has significantly reduced; lower fuel costs as the cost of fuel has significantly reduced; but higher insurance, maintenance and lease costs.

The Transport & Fleet Management Review is continuing to look at ways in which improvements can be made to the efficiency and effectiveness of this fleet aimed at reducing these operational costs.

2.3 Medical Equipment – Annual Costs

Medical equipment use requires operational (revenue) costs for associated consumables and accessories, for routine scheduled maintenance and for breakdown maintenance. The survey explored these operational costs that, together with the acquisition and installation costs, form the total cost of ownership (COO) of the equipment. Consumable and accessory costs are typically charged to individual departments and no central records will cover all these costs. In most cases maintenance costs (scheduled and unscheduled) are easier to identify. Maintenance is provided through a combination of in-house staff and external service suppliers, the latter often through service contracts. Efforts are being made through robust negotiations to fix maintenance costs, in some cases for up to 10 years, to reduce the total cost of ownership of medical devices. The annual maintenance expenditures reported by Boards is shown in the table that follows.

Description	2015 Expenditure (£m)	2016 Expenditure (£m)	% change
Externally sourced maintenance expenditure:	22.22	24.58	11%
Imaging maintenance	11.67	13.44	15%
Radiotherapy maintenance	1.16	1.15	-1%
In-house management / maintenance of medical equipment	12.54	17.70	41%
Annual payments & lease costs for managed equipment services (excluding Laboratory managed services)	4.26	3.79	-11%
All other revenue based expenditure on medical equipment	7.79	7.97	2%
TOTAL ANNUAL EXPENDITURE ON MEDICAL EQUIPMENT:	**59.64**	**68.63**	**15%**

Costs exclude VAT

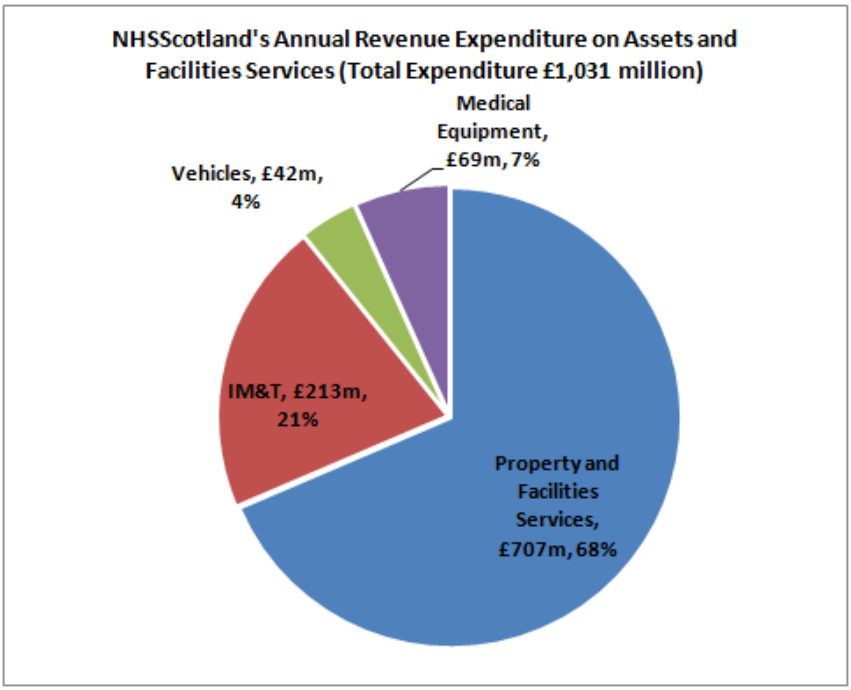
The increase in 'In-house management / maintenance of medical equipment' is as a result of more accurate figures supplied this year from NHS Lothian and NHS Fife, plus a trend towards more maintenance being carried out in-house rather than externally sourced.

As with property assets, there is a need to balance investment between ongoing annual maintenance of medical equipment, investment in its lifecycle replacement and investment in new innovative developments that advance the cost effectiveness of health care, including the ability to provide health care in the community. These advances, some facilitated by integration with information and communication technology (ICT), offer patient benefits including improved patient care, improved quality of life for patients, care in the community, and for imaging equipment clearer sharper

images with reduced radiation doses. Staff benefit from the improved equipment functionality, improved reliability, and ease of use as manufacturers respond to standards on ergonomics. As equipment life is relatively short (often less than 15 years) the level of maintenance needs to be sufficient to ensure its continued safety, availability and effectiveness within that period whilst accepting that other considerations, such as technical and clinical obsolescence, can influence the need to replace equipment earlier than planned.

2.4 Summary of Total Annual Asset and Facilities Costs

The chart below provides an analysis of the combined total asset and facilities annual expenditure that has been described earlier. The combined expenditure of £1,031 million is a small increase of less than 1% on the expenditure reported in the 2015 SAFR.



Notes: 1) Excludes depreciation costs associated with asset ownership

2) Excludes any annual expenditure on lifecycle replacement and capital expenditure on backlog maintenance

3) Property & Facilities Service Expenditure is for the Hospital Estate only.

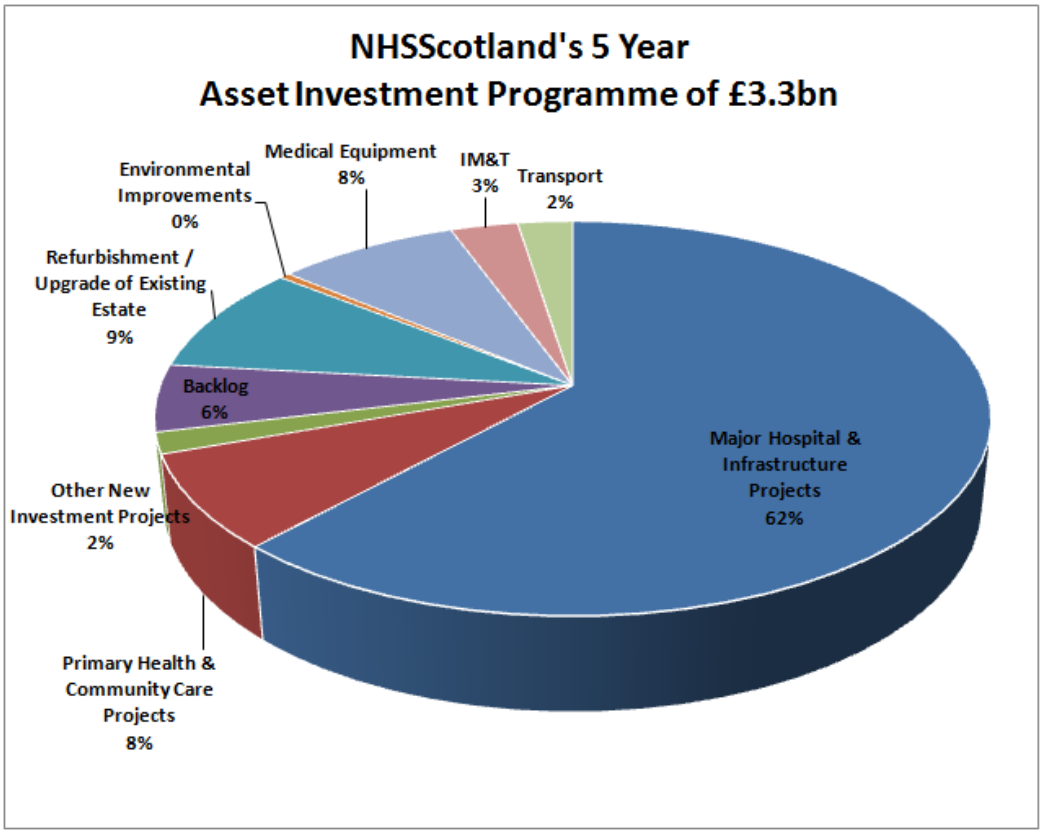
It should be noted that the above annual expenditure on assets excludes capital expenditure on:

- Replacement of existing assets – both major capital schemes (Board capital and NPD) and smaller schemes procured through hubco.
- Replacement of major existing assets - medical equipment, vehicles and IM&T – procured through revenue or Board capital.
- Major lifecycle maintenance/backlog such as boiler and major infrastructure and backlog replacement – procured through Board capital.

3.0 Planned future investment in assets

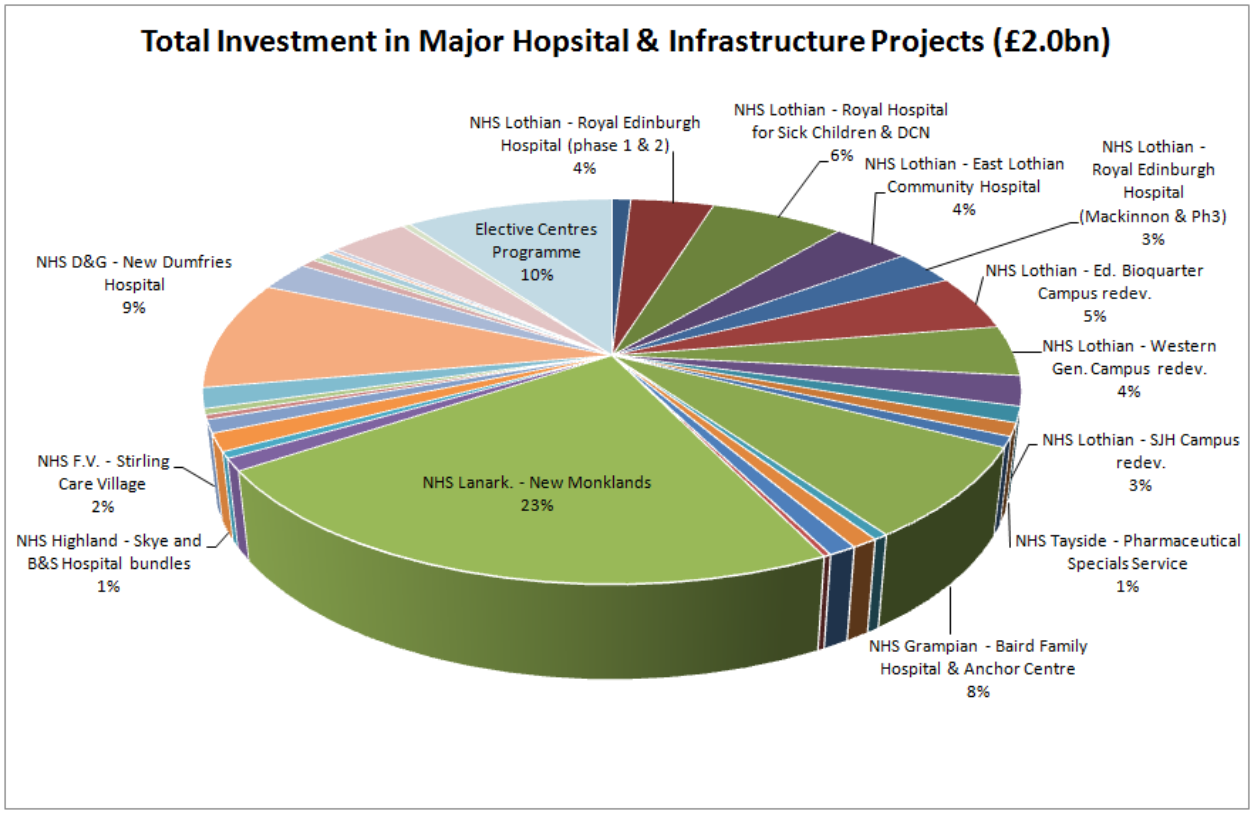
NHS Boards are planning investments in their assets over the next 5+ years of circa £3.3bn (based on NHS Boards' 5+ year investment plans presented in their PAMS). While major parts of this programme of investments are subject to funding availability and approval, it does represent a significant opportunity to further improve the condition and performance of these assets. It will also further enhance the important supporting role that assets play in the delivery of quality healthcare delivery and NHSScotland's 2020 Vision. This investment will also enable the disposal of older properties which are expected to generate receipts of over £180m over the same period (subject to economic and market conditions).

This investment covers all asset types (property, medical equipment, IM&T, and fleet) and will be achieved through a combination of capital and revenue based investment. The following chart provides a breakdown of this investment.



3.1 Investment in Major Hospital & Infrastructure Projects

Investment in 'Major Hospital & Infrastructure Projects' accounts for 62% of the overall planned future investment described above and includes the key strategic investments planned by each NHS Board. They will be funded mainly though NHS Board capital or NPD / hub revenue based funding. The following chart provides a breakdown of the £2.0bn of investment associated with these major hospital and infrastructure projects.



Note: while all major projects have been included in the above chart only those which are over 1% of the total investment have been listed, for clarity of presentation reasons only. Also, as the business case process for planning the new Monklands project is at an early stage, an element of these projected costs may fall out of the current 5 year investment programme.

3.2 Investment in Primary and Community Care

In addition to the £2.0bn of investment on the major hospital & infrastructure projects / programmes) described above (which includes some primary and community care hospital projects, a further £250 million is being planned for new primary & community care projects. This investment is key in delivering the emerging Health and Social Care Integration agenda and shifting the balance of care from hospitals to local facilities and people's homes.

3.3 Income receipts from asset disposals

A direct consequence of investment in new facilities can often be a surplus of older accommodation no longer required for operational purposes. Boards have identified in their PAMS planned disposals of these surplus properties which they report an income value of circa £185m over the next 5+ years. Scottish Futures Trust is actively supporting NHS Boards to maximise the potential of income receipts from these disposals.

The programme of anticipated income receipts per NHS Board over the next 5+ years are listed in the following table, but these are subject to change dependent upon economic and market conditions at the time of sale.

NHS Board	Anticipated Future Income Receipts from Disposals (£m)
NHS Greater Glasgow & Clyde	25
NHS Lothian	72
NHS Tayside	16
NHS Grampian	27
NHS Fife	6
NHS Ayrshire & Arran	2
NHS Lanarkshire	12
NHS Highland	3
NHS Forth Valley	12
NHS Dumfries & Galloway	3
NHS National Services Scotland	5
Others	2
TOTAL:	**185**

3.4 Investment required on vehicle assets

As described earlier in this report, many of the NHSScotland vehicles are leased and, therefore, the replacement cost of these vehicles is effectively included within the annual leasing costs. However, substantial vehicle assets remain owned, particularly those of the Scottish Ambulance Service, NHS National Services Scotland, NHS Tayside, NHS Fife, and NHS Borders. The current 5 year investment plan for vehicle assets, which is taken from NHS Boards' own investment plans and includes the Scottish Ambulance Service's vehicle replacement programme, is an average of circa £16m per annum. Earlier analysis of age profile suggests that there isn't currently a backlog of investment need for these assets but funding levels will need to be maintained to continue to support this position.

3.5 Investment required on medical equipment assets

In relation to its overall £1 bn replacement value, during 2015/16 a total of over £65m was invested in medical equipment. This would theoretically result in complete replacement of all existing equipment within 15 years. However, a general planning rule is that most equipment should be replaced within a 10 - 15 year cycle; hence, the current investment level seems to be set at a minimum level with limited scope for investment in additional equipment. Note that rapid technological developments in some equipment, including high cost radiotherapy, imaging and endoscopy equipment; which together account for approximately 40% of the total value of medical equipment, reduces the effective lifespan of this equipment to 7 to 10 years.

The speed of change in technology over the last 10 years has added further pressure to upgrade equipment more regularly and to meet the additional cost of this technologically enabled equipment. There are also specific peaks in investment requirements often associated with earlier equipping programmes for new hospitals.

Some of the risks and issues associated with using medical equipment beyond its recommended lifespan include:

- Equipment failure leading to service withdrawal or unavailability.
- Failure to meet diagnostic & treatment standards expected for NHSScotland.
- The potential harm to patients of using sub-standard equipment.
- Increasing reliability problems disrupting service provision.
- Increasing cost of maintenance and parts replacements
- Removal of manufacturers support for older equipment.

Accordingly, future investment in medical investment would need to increase by up to 50% if it was to achieve an ideal position of a full replacement cycle of 10 years.

Further information is available in Annex C on medical equipment assets.

3.6 Investment required on IM&T assets

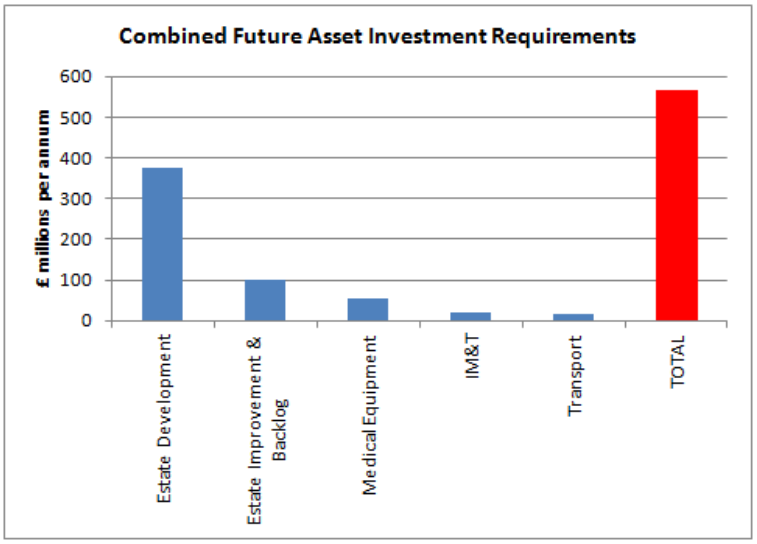
NHS Boards are reporting planned expenditure on IM&T projects of circa £100 million over the next 5 years, which is similar to that reported in last year's SAFR. Further IM&T investment is also incorporated into some of the major investment projects associated with the refurbishment and replacement of property assets.

This expenditure is part of the overall eHealth Finance Strategy and, in addition, the Scottish Government's eHealth Division retained funds may also be used to contribute to refresh activities in relation to infrastructure.

Careful management will be required to ensure that a build-up of infrastructure (network cabling, servers, etc.) backlog does not arise due to the increasing use of end user IM&T equipment, as well as the relatively short life of desktop and mobile equipment devices, which have the potential to outgrow the capacity of the infrastructure. This investment will also need to fund any additional investment in technology.

3.7 Summary of asset investment plans

The combined asset investment plans of circa £565 million per annum are shown in the chart below. Although presented as a single investment amount, in practice some of the capital requirement will be funded through revenue schemes such as NPD, hub and leasing arrangement.

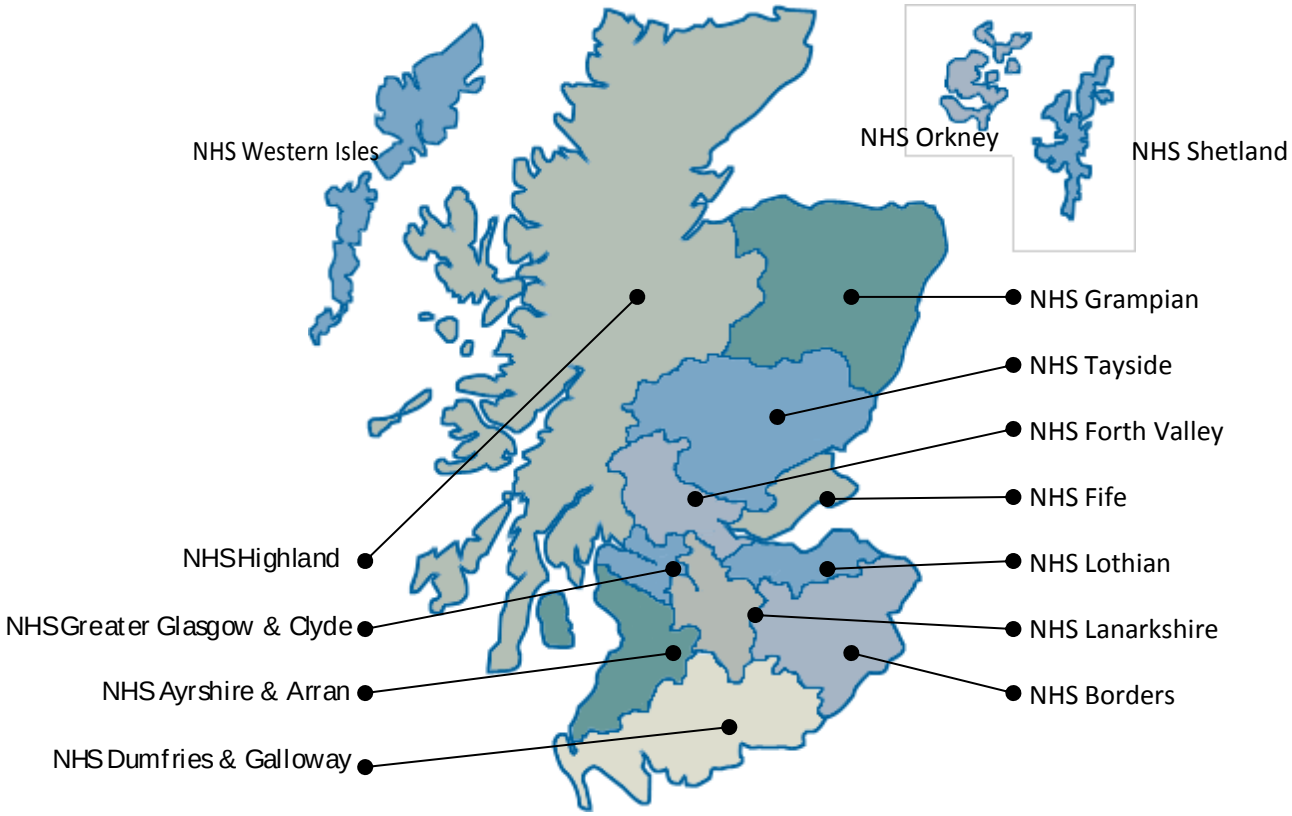


In addition to the investment requirements identified above there is expected to be further investment required to implement the recommendations of the Shared Services and Soft FM reviews, and any environmental improvement investment projects.

Annex A
Review of NHSScotland's Property Assets

This Annex provides a detailed analysis of property, vehicles, medical equipment and IM&T asset performance which supports the summarised information provided in the main body of the report.

The responsibility for the management of NHSScotland's assets rests with 14 NHS Boards and 8 Special NHS Boards.



Special NHS Boards

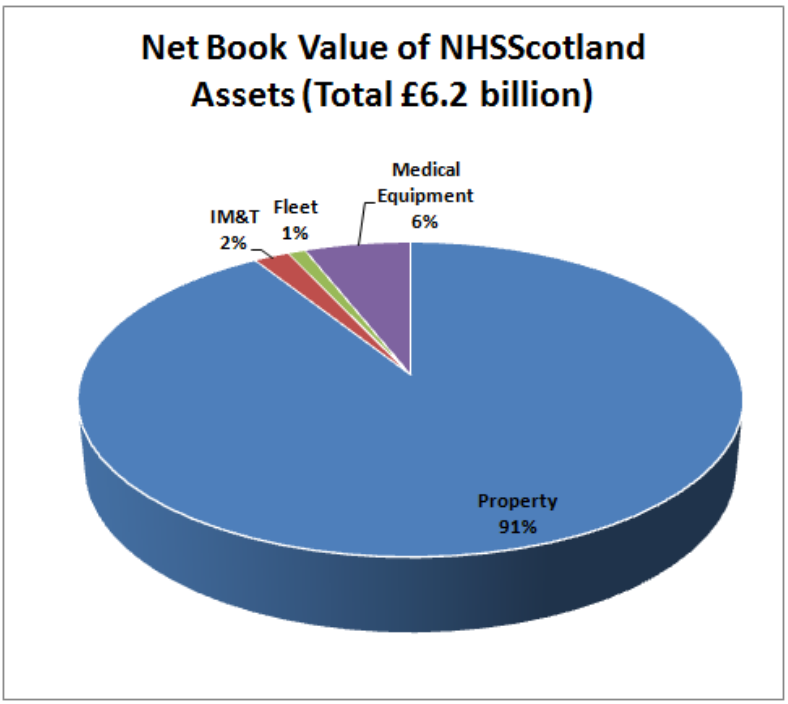
NHS Education for Scotland	NHS Health Scotland
NHS National Services Scotland	NHS National Waiting Times Centre
Healthcare Improvement Scotland	NHS 24
Scottish Ambulance Service	The State Hospitals Board for Scotland

The information presented in this annex combines information from all 22 NHS Boards and Special NHS Boards, however, some charts and tables split the analysis between the 16 Boards with in-patient accommodation (labelled NHS Boards), i.e. all 14 NHS Boards plus the NHS National Waiting Times Centre - Golden Jubilee and the State Hospitals Board for Scotland, and the 6 remaining Special NHS Boards.

It should be noted that all information presented in this section is broadly based on April 2016 information, unless otherwise stated.

Asset Value

NHSScotland owns physical assets that are worth circa £6.2bn. Most of these assets relate to the estate (land and buildings) which are estimated to be worth £5.6bn. Other significant fixed assets which are owned are vehicles, medical equipment and information management and technology (IM&T) assets. An estimate of the Net Book Value of these owned assets is shown in the chart below.



Taken from information returned by each NHS Board

The NHS also has assets which it does not own including buildings, vehicles, medical equipment and IM&T. These assets are estimated to be worth a further £1.4 bn, the majority of which are hospitals and health centres managed under Public Private Partnership (PPP) agreements. Also, the majority of cars used by NHSScotland staff are leased, with staff paying for their own non-business element of these leased vehicles.

In addition to the NHSScotland owned and leased property assets, there are numerous smaller properties used to provide a range of community and family health services provided by GPs, Pharmacists, Dentists and Opticians, many of which are owned or leased by these independent practitioners themselves and paid for indirectly by the NHS through a range of charging and re-imbursement mechanisms.

Estate Size

The NHSScotland estate comprises circa 4.4m. sq.m of building floor area encompassing buildings ranging in size from 40 sq.m to 200,000 sq.m. The majority of this is the hospital estate of the 14 NHS Boards and 2 Special NHS Boards (NHS National Waiting Times Centre and the State Hospitals Board). The 2015 ISD Cost Book records this hospital estate as 216 hospitals with a total building area of 3.67m sq.m.

The other property types that account for the further 0.8m sq. m. includes health centres & clinics, day centres, offices, residential accommodation, and industrial / storage units.

The table that follows shows an analysis of the hospital estate by type of hospital in terms number of sites and building area.

	Acute	Long Stay	Mental Health	Psychiatric & Learning Disabilities	Community	Other	Total
Number of Hospitals	38	45	33	12	67	21	216
Hopsital Area (million sq.m)	2.44	0.27	0.46	0.04	0.23	0.23	3.67
Percentage of total area (rounded)	67%	7%	12%	1%	6%	7%	100%

The above table shows that whilst community hospitals are the most numerous (67) they only represent 6% of the total hospital estate in terms of building area i.e. a large number of small hospitals. In contrast, the 38 acute hospitals account for 67% of the total hospital estate in terms of building area.

The total number of hospitals included in this analysis has reduced by four since last year, mainly due to the reclassification / exclusion of some day hospitals from reported cost information. It should also be recognised that a number of the hospitals included in the broad categorisation of “Long Stay Hospitals” includes hospitals with acute long stay beds, psychiatric long stay beds and psychiatric day hospitals. These hospitals may also have other types of beds which are not classified as “long stay”.

Providing services more locally is an integral part of the 2020 Vision and this is expected to have an impact on the size and distribution of the hospital estate. Subsequent changes in the hospital estate will continue to be monitored as part of SAFR in future years.

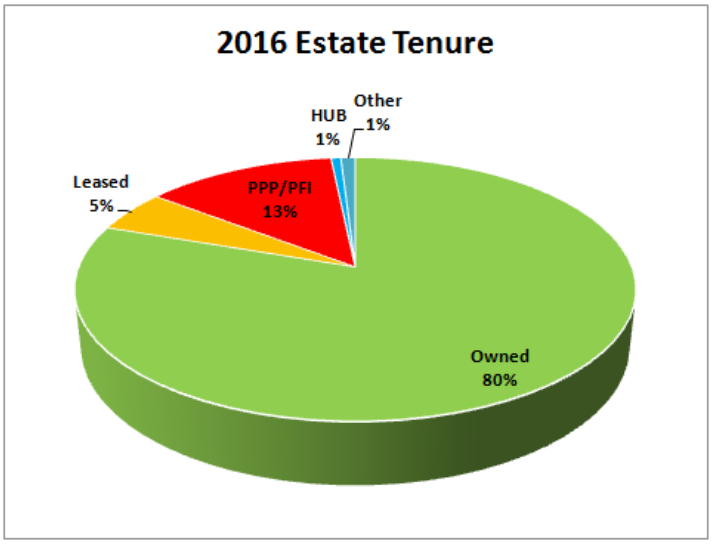
The current distribution of the hospital estate (by numbers of hospitals and by area sq.m) across the Boards is shown in the tables that follow.

	Distribution of hospitals (numbers) across the NHS Boards						
Board	**Acute**	**Long Stay**	**Mental Health**	**Psychiatric & LD**	**Community**	**Other**	**Total**
NHS Greater Glasgow	8	6	8	1	0	5	28
NHS Grampian	4	1	3	1	17	2	28
NHS Tayside	3	3	4	2	8	5	25
NHS Highland	4	4	2	0	14	2	26
NHS Lothian	4	12	2	2	2	2	24
NHS Dumfries & Galloway	2	3	2	2	6	2	17
NHS Lanarkshire	3	5	2	1	4	0	15
NHS Borders	1	6	2	0	4	2	15
NHS Fife	2	1	3	1	4	0	11
NHS Ayrshire & Arran	3	3	1	1	3	0	11
NHS Forth Valley	1	1	3	1	3	0	9
NHS Western Isles	1	0	0	0	2	0	3
State Hospital	0	0	1	0	0	0	1
Golden Jubilee	0	0	0	0	0	1	1
NHS Orkney	1	0	0	0	0	0	1
NHS Shetland	1	0	0	0	0	0	1
							216

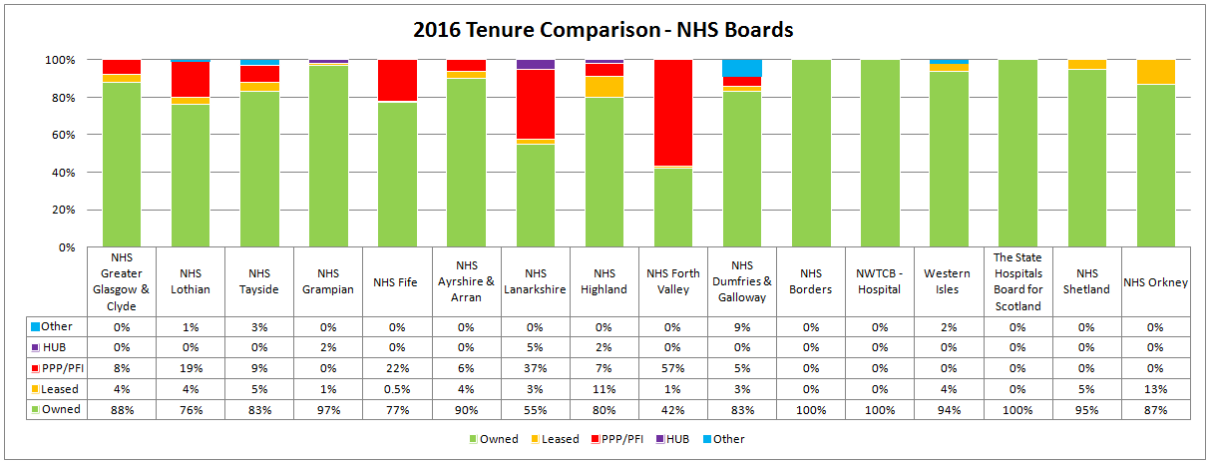
Distribution of hospital estate by area (sq.m)		
Board	**Total area (million sq.m.)**	**Percentage of NHSScotland Total Area (rounded)**
NHS Greater Glasgow	1.07	29%
NHS Lothian	0.56	15%
NHS Tayside	0.43	12%
NHS Grampian	0.33	9%
NHS Fife	0.25	7%
NHS Lanarkshire	0.21	6%
NHS Ayrshire & Arran	0.21	6%
NHS Highland	0.22	6%
NHS Forth Valley	0.15	4%
NHS Dumfries & Galloway	0.07	2%
NHS Borders	0.06	2%
Golden Jubilee	0.06	2%
State Hospital	0.02	1%
NHS Western Isles	0.02	1%
NHS Orkney	0.01	0.2%
NHS Shetland	0.01	0.2%
	3.67	**100%**

Estate Tenure

The majority of the NHSScotland estate is owned (80%) but for some NHS Boards PPP/PFI (including NPD and Hub) and leased property is a significant proportion of their estate, as shown in the charts that follow.

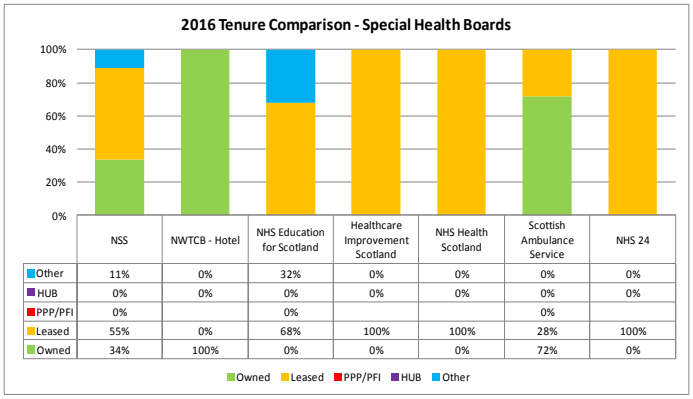


Tenure profile above includes all 22 NHS Boards and Special NHS Boards, where information is available



	NHS Greater Glasgow & Clyde	NHS Lothian	NHS Tayside	NHS Grampian	NHS Fife	NHS Ayrshire & Arran	NHS Lanarkshire	NHS Highland	NHS Forth Valley	NHS Dumfries & Galloway	NHS Borders	NWTCB - Hospital	Western Isles	The State Hospitals Board for Scotland	NHS Shetland	NHS Orkney
Other	0%	1%	3%	0%	0%	0%	0%	0%	0%	9%	0%	0%	2%	0%	0%	0%
HUB	0%	0%	0%	2%	0%	0%	5%	2%	0%	0%	0%	0%	0%	0%	0%	0%
PPP/PFI	8%	19%	9%	0%	22%	6%	37%	7%	57%	5%	0%	0%	0%	0%	0%	0%
Leased	4%	4%	5%	1%	0.5%	4%	3%	11%	1%	3%	0%	0%	4%	0%	5%	13%
Owned	88%	76%	83%	97%	77%	90%	55%	80%	42%	83%	100%	100%	94%	100%	95%	87%

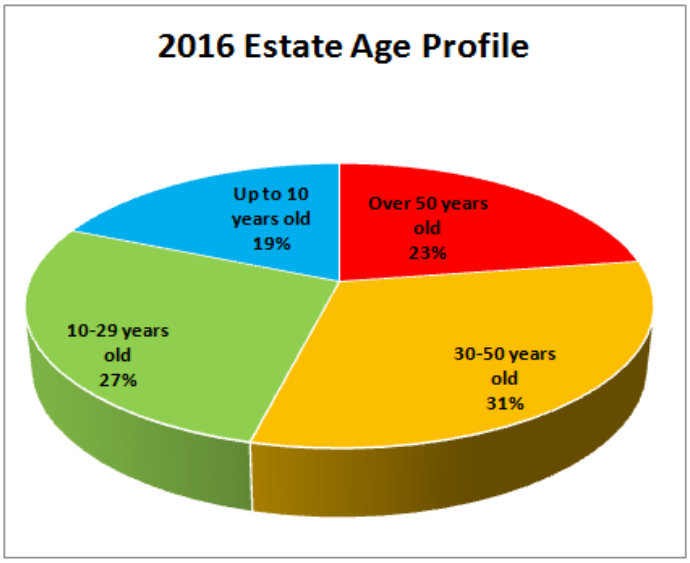
The majority of office accommodation occupied by Special NHS Boards is leased.



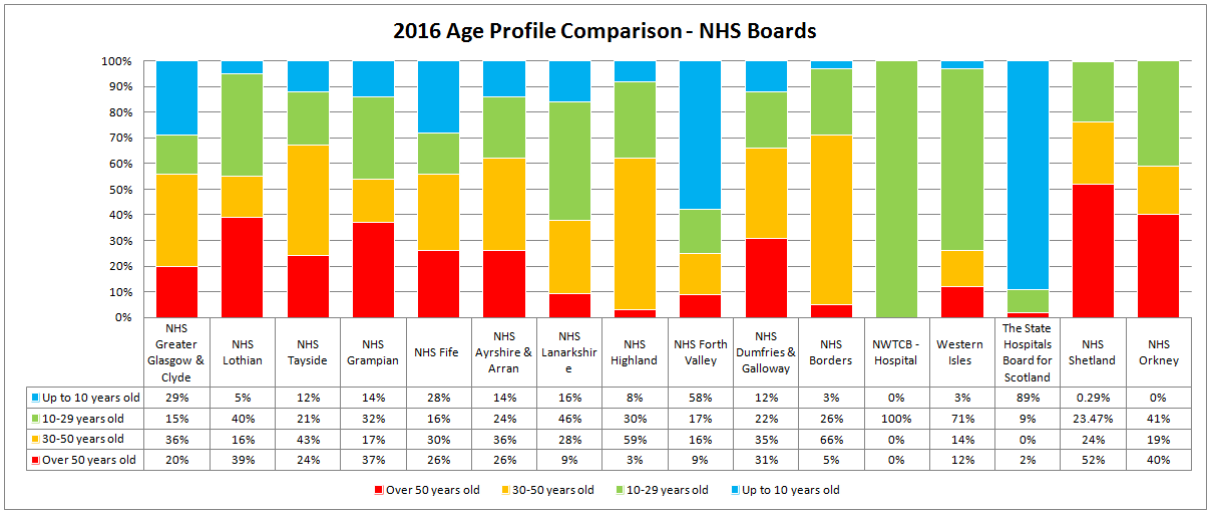
	NSS	NWTCB - Hotel	NHS Education for Scotland	Healthcare Improvement Scotland	NHS Health Scotland	Scottish Ambulance Service	NHS 24
Other	11%	0%	32%	0%	0%	0%	0%
HUB	0%	0%	0%	0%	0%	0%	0%
PPP/PFI	0%		0%			0%	
Leased	55%	0%	68%	100%	100%	28%	100%
Owned	34%	100%	0%	0%	0%	72%	0%

Estate Age

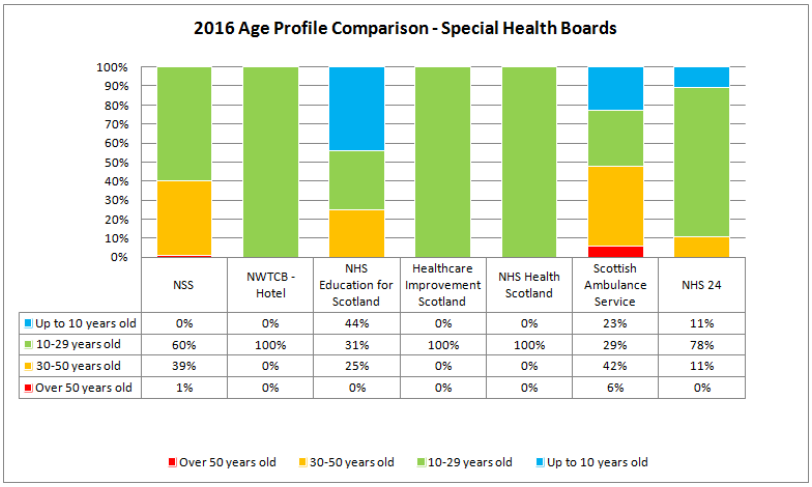
NHSScotland occupies approximately 824,000 sq.m (19% of the total) of relatively new / modern accommodation (i.e. less than 10 years old), which is an increase of 153,000 sq.m since 2011, and is evidence of the significant capital investment in property assets over recent years. There does, however, remain scope for improvement and further investment or disposal in the estate in order to move away from old, poor quality and functionally unsuitable properties. The following charts show the range of property ages for the NHS Boards, which indicates that 23% of the estate remains over 50 years old (note that some older properties are refurbished to modern standards rather than replaced).



Age profile above includes all 22 NHS Boards and Special NHS Boards



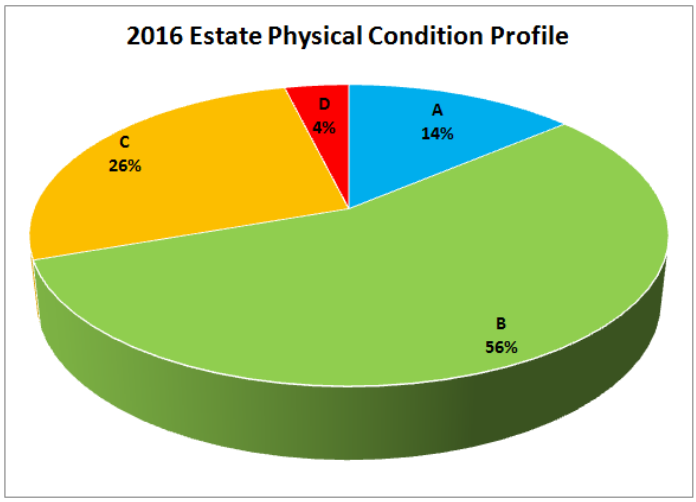
	NHS Greater Glasgow & Clyde	NHS Lothian	NHS Tayside	NHS Grampian	NHS Fife	NHS Ayrshire & Arran	NHS Lanarkshire	NHS Highland	NHS Forth Valley	NHS Dumfries & Galloway	NHS Borders	NWTCB - Hospital	Western Isles	The State Hospitals Board for Scotland	NHS Shetland	NHS Orkney
Up to 10 years old	29%	5%	12%	14%	28%	14%	16%	8%	58%	12%	3%	0%	3%	89%	0.29%	0%
10-29 years old	15%	40%	21%	32%	16%	24%	46%	30%	17%	22%	26%	100%	71%	9%	23.47%	41%
30-50 years old	36%	16%	43%	17%	30%	36%	28%	59%	16%	35%	66%	0%	14%	0%	24%	19%
Over 50 years old	20%	39%	24%	37%	26%	26%	9%	3%	9%	31%	5%	0%	12%	2%	52%	40%



	NSS	NWTCB - Hotel	NHS Education for Scotland	Healthcare Improvement Scotland	NHS Health Scotland	Scottish Ambulance Service	NHS 24
Up to 10 years old	0%	0%	44%	0%	0%	23%	11%
10-29 years old	60%	100%	31%	100%	100%	29%	78%
30-50 years old	39%	0%	25%	0%	0%	42%	11%
Over 50 years old	1%	0%	0%	0%	0%	6%	0%

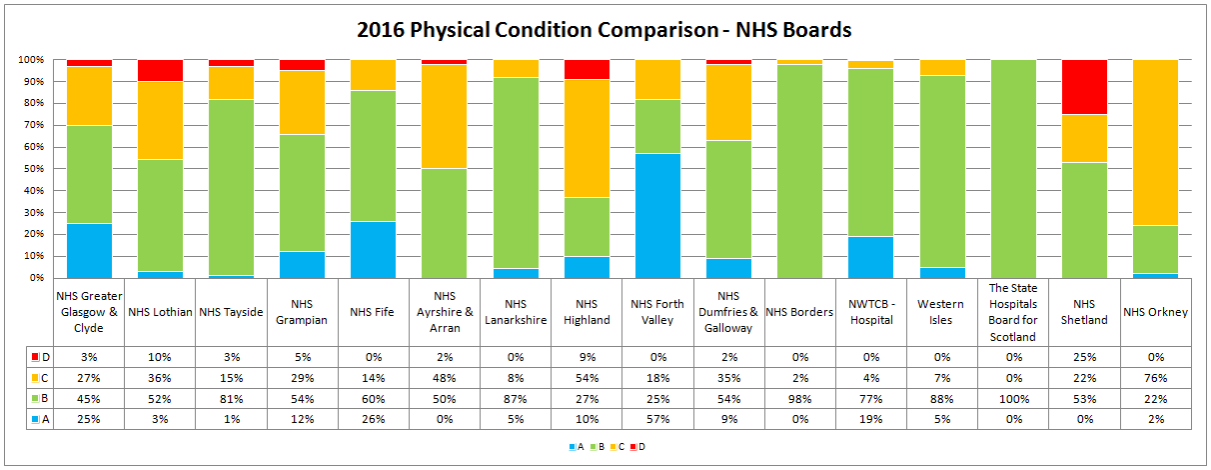
Estate Condition

The Boards report that 70% of their estate is in good physical condition (category A or B) with 26% requiring investment to improve its condition (category C) and 4% being unsatisfactory and requiring major investment or replacement (category D).

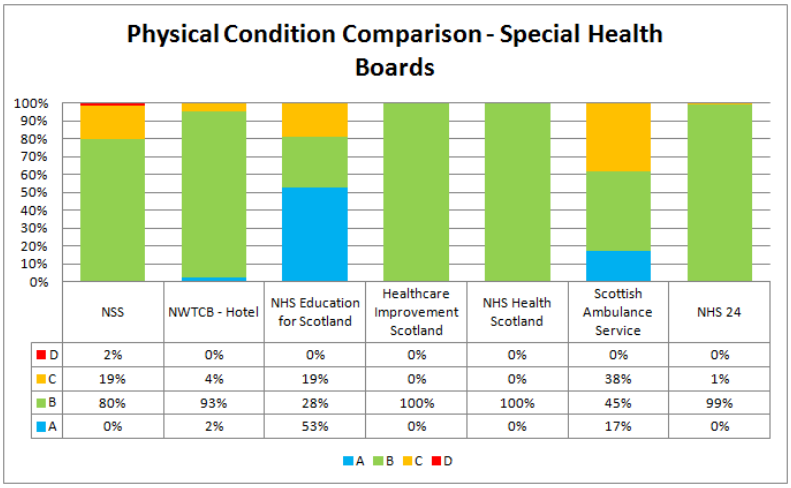


The proportion of the estate in good physical condition of 70% is higher than the 66% reported in the 2015 SAFR. Boards advise that this is as a result of the rationalisation of parts of the NHSScotland estate following completion of associated property replacement projects.

The two charts that follow highlight the variance in condition across the NHS Boards.



	NHS Greater Glasgow & Clyde	NHS Lothian	NHS Tayside	NHS Grampian	NHS Fife	NHS Ayrshire & Arran	NHS Lanarkshire	NHS Highland	NHS Forth Valley	NHS Dumfries & Galloway	NHS Borders	NWTCB - Hospital	Western Isles	The State Hospitals Board for Scotland	NHS Shetland	NHS Orkney
D	3%	10%	3%	5%	0%	2%	0%	9%	0%	2%	0%	0%	0%	0%	25%	0%
C	27%	36%	15%	29%	14%	48%	8%	54%	18%	35%	2%	4%	7%	0%	22%	76%
B	45%	52%	81%	54%	60%	50%	87%	27%	25%	54%	98%	77%	88%	100%	53%	22%
A	25%	3%	1%	12%	26%	0%	5%	10%	57%	9%	0%	19%	5%	0%	0%	2%



	NSS	NWTCB - Hotel	NHS Education for Scotland	Healthcare Improvement Scotland	NHS Health Scotland	Scottish Ambulance Service	NHS 24
D	2%	0%	0%	0%	0%	0%	0%
C	19%	4%	19%	0%	0%	38%	1%
B	80%	93%	28%	100%	100%	45%	99%
A	0%	2%	53%	0%	0%	17%	0%

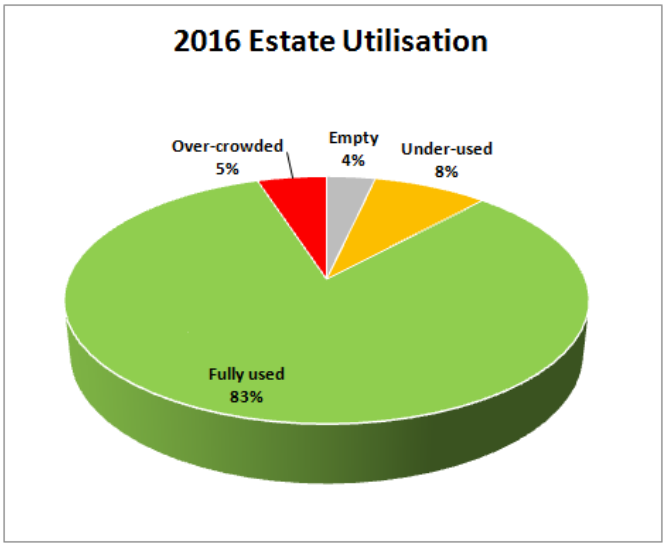
Further to the above Board level analysis, it is now possible through the Estate Asset Management System (EAMS) to report on estate KPIs such as physical condition and backlog maintenance at hospital level. Analysis of this information is being used by NHS Boards to link their property improvement needs and their strategic & service plans for improvement included within their PAMS.

NHS Boards which have buildings assessed as category D – “unsatisfactory” have indicated that they have plans in place to either dispose, replace, or improve these buildings over the next 5-10 years.

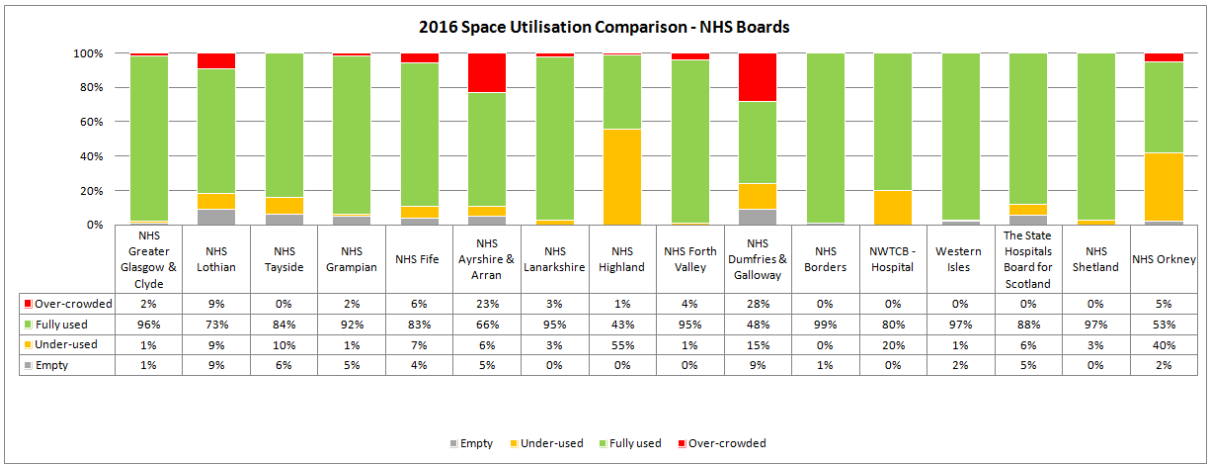
Estate Utilisation

Accommodation space has a direct relationship with cost. The aim, therefore, is to hold only that space which is needed to support the delivery and support of effective and efficient service delivery. Analysis of the information contained within each NHS Board's Property and Asset Management Strategy shows that approximately 83% of the NHSScotland estate is fully utilised although some under utilisation and some overcrowding is evident as shown in the chart below.

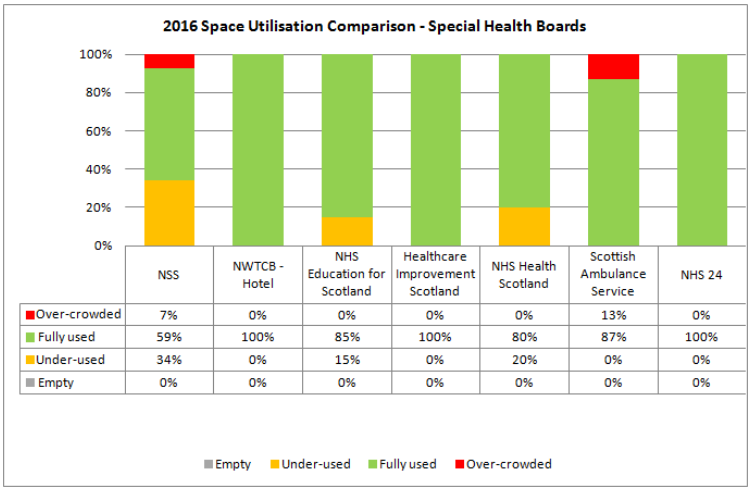
This profile has improved from that reported in the 2015 SAFR when the percentage fully utilised was 81%.



The following charts highlight that space utilisation can vary across the NHS Boards.



	NHS Greater Glasgow & Clyde	NHS Lothian	NHS Tayside	NHS Grampian	NHS Fife	NHS Ayrshire & Arran	NHS Lanarkshire	NHS Highland	NHS Forth Valley	NHS Dumfries & Galloway	NHS Borders	NWTCB - Hospital	Western Isles	The State Hospitals Board for Scotland	NHS Shetland	NHS Orkney
Over-crowded	2%	9%	0%	2%	6%	23%	3%	1%	4%	28%	0%	0%	0%	0%	0%	5%
Fully used	96%	73%	84%	92%	83%	66%	95%	43%	95%	48%	99%	80%	97%	88%	97%	53%
Under-used	1%	9%	10%	1%	7%	6%	3%	55%	1%	15%	0%	20%	1%	6%	3%	40%
Empty	1%	9%	6%	5%	4%	5%	0%	0%	0%	9%	1%	0%	2%	5%	0%	2%



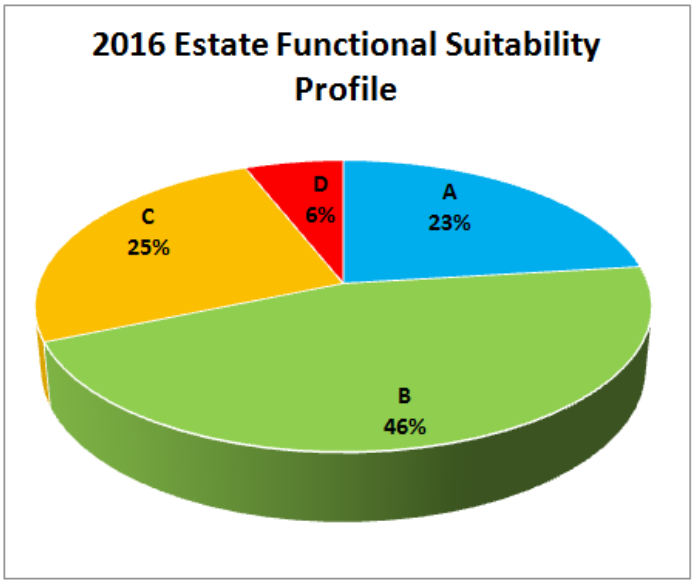
	NSS	NWTCB - Hotel	NHS Education for Scotland	Healthcare Improvement Scotland	NHS Health Scotland	Scottish Ambulance Service	NHS 24
Over-crowded	7%	0%	0%	0%	0%	13%	0%
Fully used	59%	100%	85%	100%	80%	87%	100%
Under-used	34%	0%	15%	0%	20%	0%	0%
Empty	0%	0%	0%	0%	0%	0%	0%

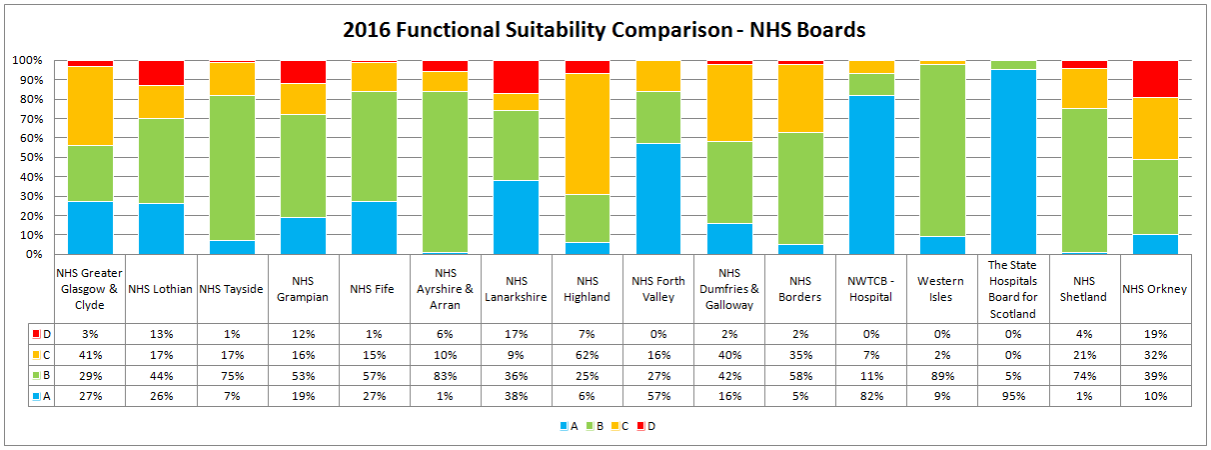
The under utilisation of accommodation across NHS Highland and NHS Orkney reflects the challenges faced from such a geographically diverse area and the need to maintain and provide critical healthcare facilities in locations with relatively low population masses.

Estate functional suitability

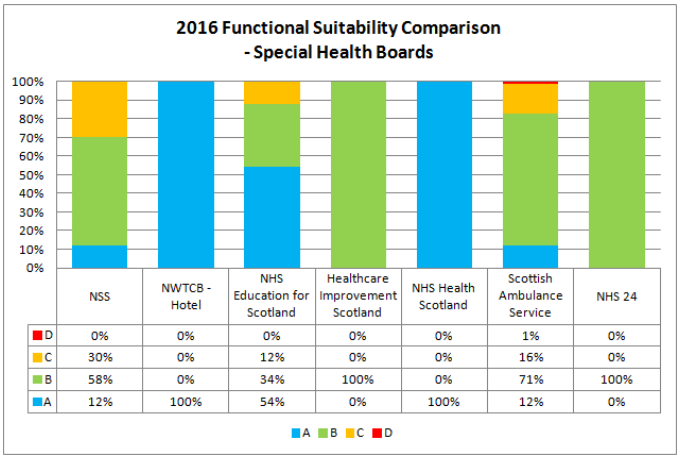
The estate also plays an important role in supporting the effective delivery of services. Poor functional suitability often results in inefficient working practices, increased staffing levels and poor clinical outcomes. Approximately 69% of the NHSScotland estate is functionally suitable but, as shown in the charts that follow, this can vary significantly across NHS Boards.

This profile shows a slight 3% decrease in the area of the estate in categories A & B compared to that reported in 2015. Boards have advised that this is as a result of the annual re-assessment of buildings for functional suitability.





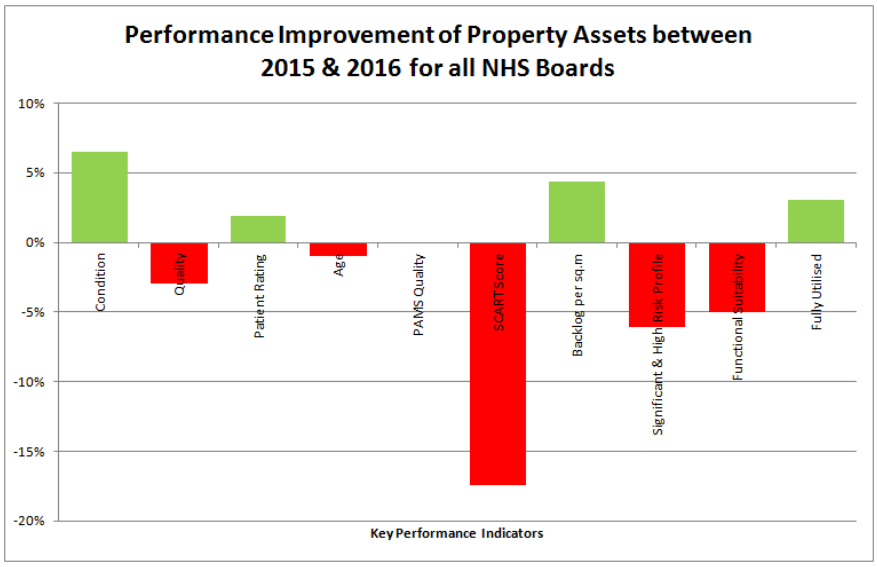
	NHS Greater Glasgow & Clyde	NHS Lothian	NHS Tayside	NHS Grampian	NHS Fife	NHS Ayrshire & Arran	NHS Lanarkshire	NHS Highland	NHS Forth Valley	NHS Dumfries & Galloway	NHS Borders	NWTCB - Hospital	Western Isles	The State Hospitals Board for Scotland	NHS Shetland	NHS Orkney
D	3%	13%	1%	12%	1%	6%	17%	7%	0%	2%	2%	0%	0%	0%	4%	19%
C	41%	17%	17%	16%	15%	10%	9%	62%	16%	40%	35%	7%	2%	0%	21%	32%
B	29%	44%	75%	53%	57%	83%	36%	25%	27%	42%	58%	11%	89%	5%	74%	39%
A	27%	26%	7%	19%	27%	1%	38%	6%	57%	16%	5%	82%	9%	95%	1%	10%



	NSS	NWTCB - Hotel	NHS Education for Scotland	Healthcare Improvement Scotland	NHS Health Scotland	Scottish Ambulance Service	NHS 24
D	0%	0%	0%	0%	0%	1%	0%
C	30%	0%	12%	0%	0%	16%	0%
B	58%	0%	34%	100%	0%	71%	100%
A	12%	100%	54%	0%	100%	12%	0%

Performance Improvement of Property Assets

The following chart provides a comparative overview of performance improvement in property assets between 2015 and 2016.

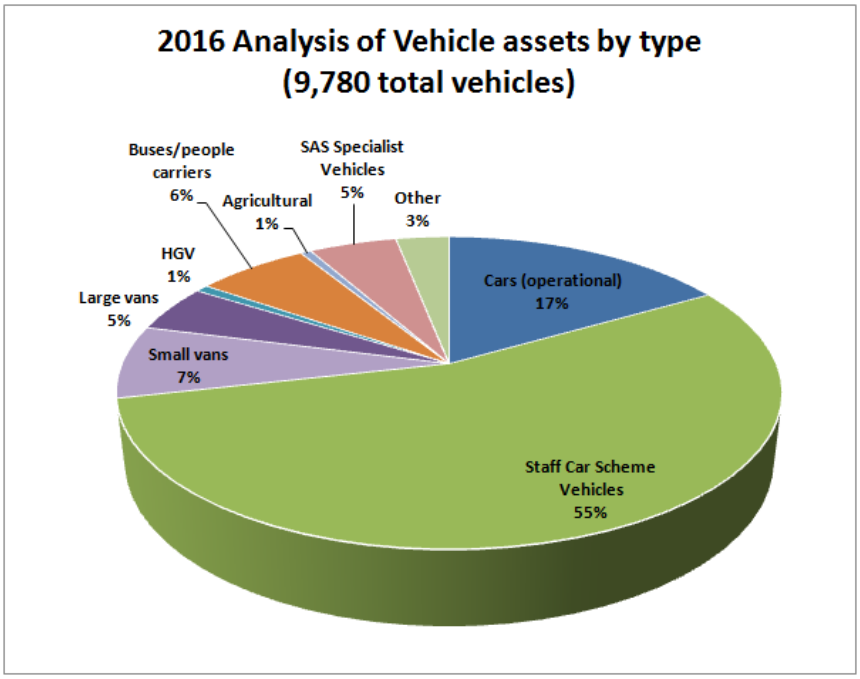


Note: green bars above the horizontal indicate a positive improvement whereas a red bar below the horizontal indicates a performance reduction.
The backlog analysis excludes inflation for comparative purposes.
The PAMS Quality assessments take place every two years hence the reason this has not been shown this year.

The above chart highlights performance improvement for physical condition, utilisation and backlog per square metre across these property based KPIs. These positive results reflect the good progress made by NHS Boards in improving the state of NHSScotland's estate. However, the quality and functional suitability has reduced as the estate continues to age. The SCART score has also reduced significantly and this is due to the transition to the new SCART 2 review process which Boards have found more onerous than previously.

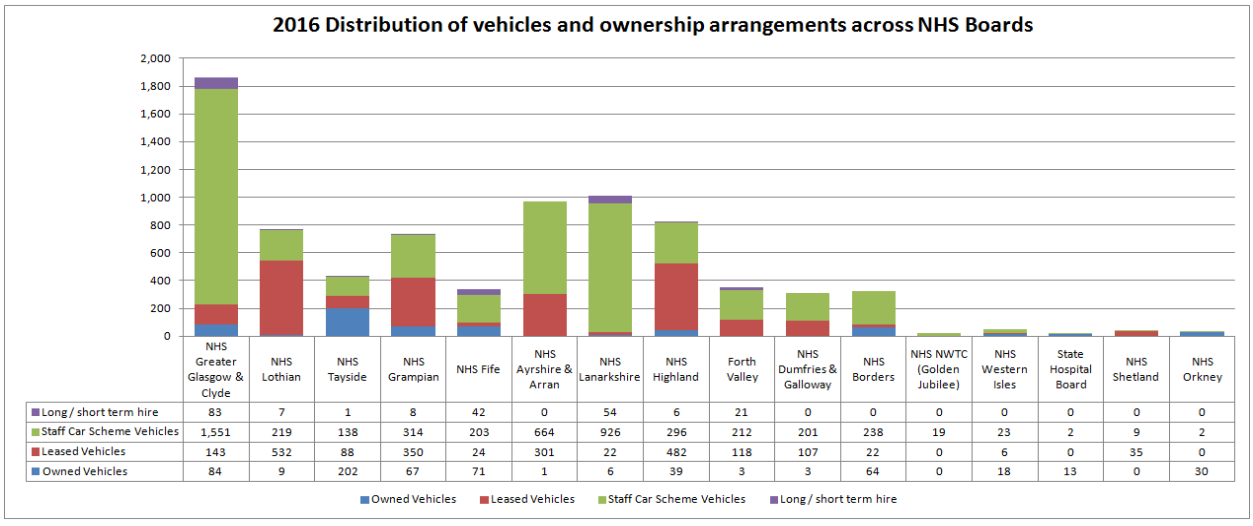
Annex B
Review of NHSScotland's Vehicle Assets

Analysis of vehicle assets is based on annual pro-forma information returned by each NHS Board. NHSScotland's vehicle assets comprise of approximately 10,000 vehicles, the majority of which are staff car scheme vehicles (55%) and operational cars (17%). The chart below provides a breakdown of NHSScotland's vehicle assets by type.

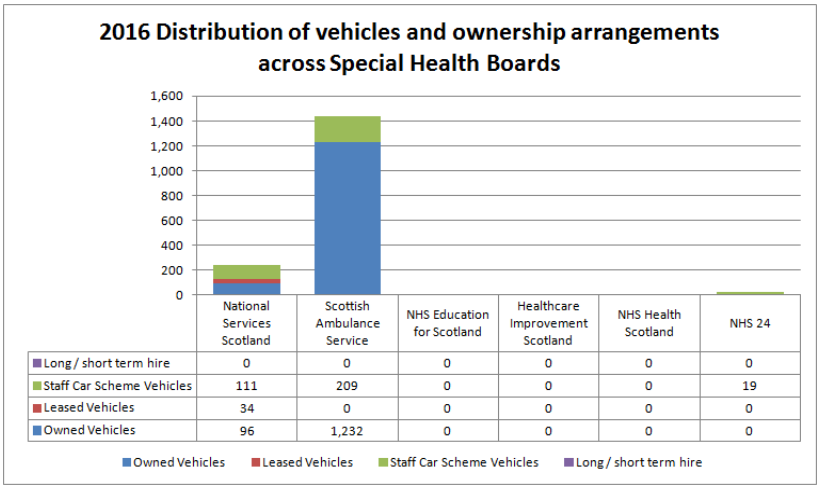


This excludes national logistics vehicles

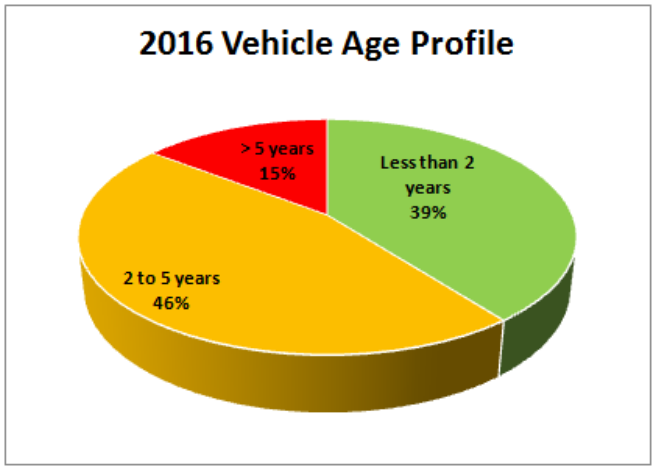
The distribution of these vehicle assets and their ownership arrangements across NHS Boards and Special Health Boards is shown in the following two charts.



	NHS Greater Glasgow & Clyde	NHS Lothian	NHS Tayside	NHS Grampian	NHS Fife	NHS Ayrshire & Arran	NHS Lanarkshire	NHS Highland	Forth Valley	NHS Dumfries & Galloway	NHS Borders	NHS NWTC (Golden Jubilee)	NHS Western Isles	State Hospital Board	NHS Shetland	NHS Orkney
Long / short term hire	83	7	1	8	42	0	54	6	21	0	0	0	0	0	0	0
Staff Car Scheme Vehicles	1,551	219	138	314	203	664	926	296	212	201	238	19	23	2	9	2
Leased Vehicles	143	532	88	350	24	301	22	482	118	107	22	0	6	0	35	0
Owned Vehicles	84	9	202	67	71	1	6	39	3	3	64	0	18	13	0	30



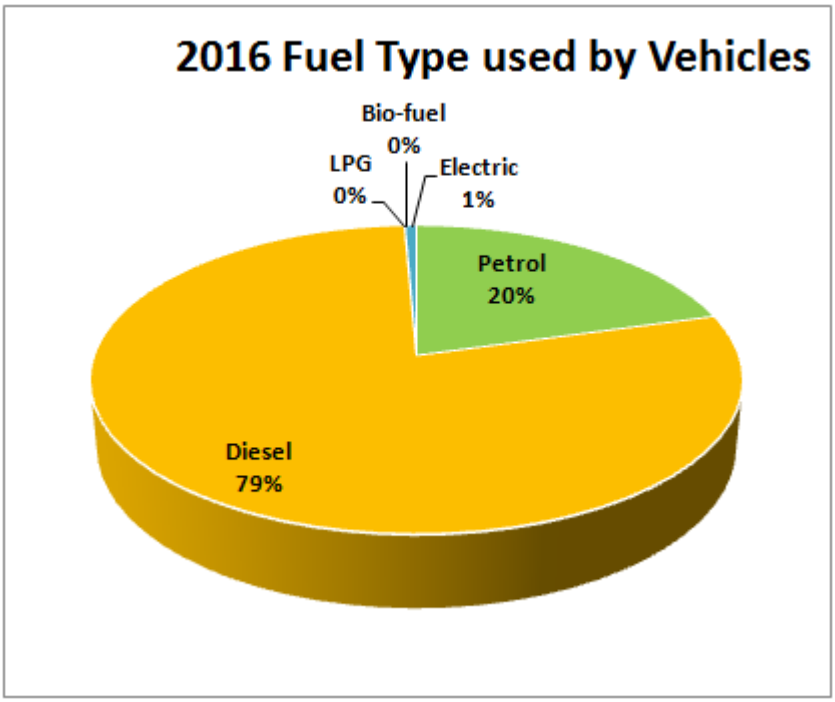
The vehicle age profile for all NHS Boards is shown in the charts that follow and shows that circa 85% of the vehicles are less than five years old. This represents a reasonable age profile for this asset group and indicates that investment is currently maintaining a reasonable standard of vehicle asset provision.



Comparative information on vehicle mileage is sufficient this year to monitor annual changes from the previous year (see table below).

Total Vehicle Mileage	2016		2015		% Change in Total Mileage
	Total (million)	Per Vehicle	Total (million)	Per Vehicle	
Owned	32.90	16,976	30.62	15,847	+7%
Leased	19.84	8,764	24.33	9,671	-18%
Staff Car Scheme	21.53	4,020	27.05	4,876	-20%
Staff Private Car	51.09		51.69		-1%
TOTAL Mileage	125.37		133.69		

The type of fuel used by these vehicles is also an important consideration and the following chart shows the current reliance on diesel fuel (79% of vehicles). However, there has been an increase of 21 alternatively fueled vehicles that are operated within the NHSScotland fleet and the number of vehicles now sits at 66.



Electric accounts for 0.4%, and the other alternatives 0.03%

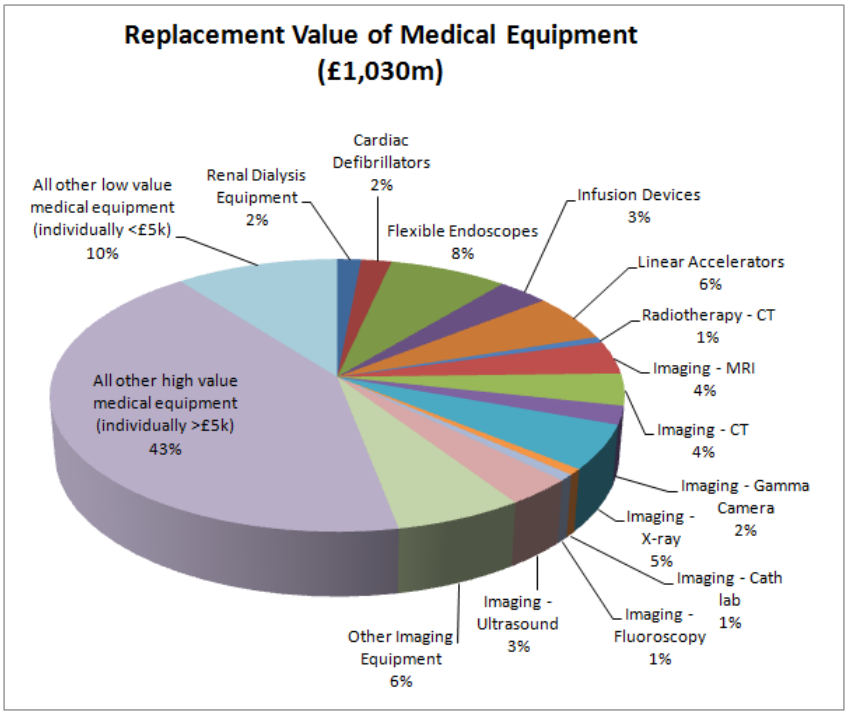
Annex C
Review of NHSScotland's Medical Equipment

Information has been gathered from each NHS Board and the national imaging and radiotherapy equipment groups to gain a more accurate understanding of the scope and value of medical equipment across NHSScotland. In addition to the global overview of the value of medical equipment, it also sought more detailed information on the following specific equipment types:

- Renal dialysis equipment.
- Cardiac defibrillators.
- Infusion devices.
- Endoscopic equipment.
- Imaging equipment.
- Radiotherapy equipment.

This presented an overall estimated replacement value for Medical Equipment of £1,030m, which is an increase of £98m from the equivalent 2015 reported figure. However this increase can mainly be attributed to the addition of low value medical equipment (single items of value <£5k) for the first time in the report. Other factors which contribute to the increase in replacement value of medical equipment are monetary value increases and the inclusion of decontamination equipment.

The relative value of each equipment type (but excluding these low value items) is shown in the following chart:



A breakdown per NHS Board of medical equipment replacement value (as reported in the above chart) is provided in the following table:

NHS Board	Radiotherapy Equipment £m	Imaging Equipment £m	All Other Medical Equipment £m
NHS Greater Glasgow	33.0	81.1	156.3
NHS Lothian	12.3	38.1	84.9
NHS Tayside	7.2	23.4	43.8
NHS Grampian	7.7	27.7	108.4
NHS Fife	0.0	12.3	26.6
NHS Ayrshire & Arran	0.0	13.9	44.0
NHS Lanarkshire	0.0	18.2	61.8
NHS Highland	4.8	15.1	37.4
NHS Forth Valley	0.0	10.2	36.8
NHS Dumfries & G.	0.0	6.2	14.8
NHS Borders	0.0	4.6	9.9
Golden Jubilee	0.0	9.1	24.9
State Hospital	0.0	0.0	0.1
NHS Western Isles	0.0	1.7	5.3
NHS Shetland	0.0	1.7	5.6
NHS Orkney	0.0	1.4	4.3
National Services Scotland	0.0	6.6	20.4
Scottish Ambulance Service	0.0	0.0	9.0
TOTAL	65.0	271.3	694.3
	1,030.6		

Medical Equipment replacement within each Health Board is planned either on a rolling annual basis (e.g. endoscopy equipment) or in bursts to ensure standardisation (e.g. replace all defibrillators over a maximum of 2 years to ensure all devices are of the same model to ensure staff competence). Lifetime is based on clinical and technical obsolescence; the latter is often based on lack of service support and availability of parts. It should be recognised that for medical equipment, safety is the first priority and equipment is maintained to high standards in NHSScotland to ensure low risk of failure or accidents. This high level of maintenance can enable the equipment to be operated safely over extended lifecycles.

Investment in lifecycle replacement of medical equipment can vary considerably on an annual basis and “peaks” of investment are often observed in particular years when major, large equipment is replaced.

A brief summary of the scope, operational value and funding plans associated with these equipment types is described over the following pages:

Renal Dialysis Equipment

Renal dialysis units are lifesaving facilities for people with renal disorders, providing renal replacement therapy. Dialysis machines are critical to these patients' quality of life. Dialysis machines are used within acute hospitals and increasingly in patients' homes, enabling care in the community. Increasingly hospitals are striving to use technology to improve patient's quality of life and this has resulted in the introduction of night-time dialysis sessions within acute hospitals and home dialysis. The survey found approximately 980 dialysis machines across NHSScotland with a replacement value of circa £15.8m. These support nearly 255,000 patient sessions per year within dedicated Renal Dialysis Units, with circa 70 patients dialysed at home.

Cardiac Defibrillators

A defibrillator is a life-saving machine that gives the heart an electric shock to restore normal heart rhythms in some cases of heart attack. Its importance in saving people from sudden death due to heart attacks is evidence by their prevalence throughout the community in places such as shopping malls. There are 2,275 reported cardiac defibrillators based in hospital environments across NHSScotland, with quantity planning based on the time required to access a defibrillator in case of emergency. Health Boards manage a further 1,650 community based defibrillators, of which 542 are within the Scottish Ambulance Service. Overall, these account for an asset with replacement value of c.£20m. Procurements are managed to ensure defibrillator standardisation which is crucial to ensure staff familiarity. Defibrillators are expected to have a lifespan of 10 years which would require an average annual investment of approximately £2m p.a. to replace, though in practice each NHS Board will attempt to replace theirs over a shorter period of time.

Infusion Devices

An infusion device delivers fluids and medication in solution to the patient in a controlled way. They do so safely, consistently and accurately for a wide range of clinical purposes including general medication delivery typical directly into patient's veins. They provide anaesthesia, chemotherapy, powerful heart acting medication and pain relief, with some devices enabling patients to control their own medication delivery. Their portability enables them to be used in the community, with the widespread use of portable devices, powered by batteries, supporting care in the community, particularly for pain and symptom relief (e.g. nausea and vomiting) in palliative care. Individually the infusions devices cost between about £1k and £3k, but the cumulative value of over 20,700 devices is circa £34m.

Endoscopic Equipment

An endoscope is an investigative and screening device used to examine the inside of the body and to diagnose various conditions. Broadly speaking, endoscopy comes in two forms, those for use through natural body openings such as mouth, nose or anus

(e.g. colonoscopy screening) or those devices used for surgical procedures such as keyhole surgery. This survey examined the former. These enable minimal invasive procedures often allowing patients to be treated as outpatients. This survey examined the number of flexible endoscopes in use within Scotland, including those used for upper and lower (covering colonoscopy screening) gastrointestinal examinations. There are over 3,100 reported flexible endoscopes across NHSScotland with a replacement value of c. £78.4m. The expected useful lifespan of a flexible endoscope is 10 years, with lifespan dictated by the wear and tear associated with their normal use and their technical (withdrawal of manufacturer support) and clinical obsolescence (improved image quality and ease of use). The flexible endoscopes are used with light sources, video processors and monitors that represent an additional important financial and clinical asset not included in the £78.4m figure above. Nor is the surgical endoscopy equipment included. NHS Boards will need to carefully review and monitor the whole spectrum of their endoscopic equipment and its future investment requirements.

Imaging Equipment

Imaging equipment continues to play a significant and important role in the provision of healthcare to patients within both the acute and primary care sectors.

Magnetic Resonance Imaging (MRI) and Computerized Tomography (CT) are modalities of diagnostic equipment that are essential in almost all patient pathways and meeting waiting time targets associated with accident and emergency, oncology and diagnostics.

The National Imaging Inventory has an estimated replacement value of c.£ £271 (excl. VAT but incl. turnkey). The annual maintenance charge is £13.4 million across the inventory

Radiotherapy Equipment

The 5 Cancer Centres in Scotland have had a co-ordinated national equipment replacement programme in place since 1998, which has been instrumental in ensuring the efficient and timely replacement of radiotherapy equipment across NHSScotland. This equipment has a replacement value of £65m.

Annex D
Review of Energy Performance

In support of the aspirations of the Climate Change (Scotland) Act 2009, and the associated duties incumbent upon public sector bodies, NHSScotland Boards continue to be proactive in reducing energy consumption and associated greenhouse gas (GHG) emissions.

In the reporting year 2014/15, the cost of energy across NHSScotland's hospital sites (as reported in the ISD Cost Book) was £100,602,613 – a 4.46% *decrease* on the previous year. Absolute energy consumption at these sites (not corrected for the influence of weather) *decreased* by 3.73% in the same period.

Since 2010/11, energy costs have risen year on year, and 2014/15 marks the first year of a decrease. This is due to global reductions in wholesale energy costs which have been passed through to NHSScotland Boards via the Scottish Public Sector Utility contracts (managed by Scottish Procurement). These utility contracts cover electricity, gas, water, some liquid fuels and biomass pellets.

It should be noted, however, that wholesale energy costs and the management fees associated with these contracts make up only 50% of total costs. The remainder is comprised of pass-through charges, regulatory charges, environmental taxes and levies.

Currently the only areas that NHSScotland Boards can have influence on are the wholesale energy costs and the management fees paid to suppliers for the services they provide. NHSScotland Boards have no ability to control the application of the pass-through charges, including regulatory charges and environmental taxes that are levied at a standard rate. Most of these are set at UK Government level.

Wholesale energy costs are subject to market forces. NHSScotland works with its other public sector partners in actively managing the purchase of energy on the wholesale market through a national Risk Management Committee run by Scottish Procurement. Through this committee, maximum target costs are set to ensure the least risk of exposure to market changes. In 2014/15, the Risk Management Committee was successful in achieving a 15.7% reduction in actual costs paid against maximum target costs for electricity and a 16.7% reduction in actual costs paid against maximum target costs for gas.

NHSScotland Boards' key response to rising energy costs is to drive costs downwards through proactive energy management and reduced energy consumption.

The table that follows summarises the energy consumption and cost figures for 2013/14 and preceding years. The percentage change in energy consumption between 2013/14, the preceding year and FY 2010/11 is also shown.

Board	2010/11		2012/13		2013/14		2014/15			
	£	kWh	£	kWh	£	kWh	£	kWh	% change in kWh since 2013/14	% change in kWh since 2010/11
NHS Ayrshire & Arran	£3,914,322	78,795,444	£5,189,911	77,423,651	£5,092,905	73,766,320	£4,833,829	70,366,522	-4.61%	-10.70%
NHS Borders	£1,348,397	27,085,518	£1,744,823	25,404,536	£1,692,560	22,839,177	£1,737,461	23,063,469	0.98%	-14.85%
NHS Dumfries & Galloway	£1,563,022	47,938,572	£2,245,003	49,481,287	£2,500,227	39,690,797	£2,205,440	38,657,995	-2.60%	-19.36%
NHS Fife	£3,003,175	87,042,665	£4,379,574	117,429,333	£4,400,662	106,985,161	£4,032,375	98,913,012	-7.55%	13.64%
NHS Forth Valley	£3,133,854	78,282,675	£4,338,549	74,504,665	£4,687,648	67,650,212	£4,702,804	65,803,797	-2.73%	15.88%
NHS Grampian	£7,820,458	169,490,880	£12,571,578	212,969,192	£12,400,014	198,005,353	£10,985,574	194,279,336	-1.88%	14.63%
NHS Greater Glasgow & Clyde	£19,968,223	500,446,891	£29,976,889	486,542,584	£30,022,971	454,335,901	£29,944,411	436,498,348	-3.93%	-6.17%
NHS Highland	£6,005,545	82,053,638	£7,834,292	82,413,588	£6,885,020	74,234,505	£6,290,336	78,516,325	5.77%	-4.31%
NHS Lanarkshire	£4,514,517	101,434,805	£4,856,766	95,914,401	£6,223,039	85,181,638	£5,640,122	78,383,492	-7.98%	-22.73%
NHS Lothian	£10,487,365	245,711,792	£16,882,365	257,995,117	£16,158,779	235,583,630	£15,447,305	224,253,014	-4.81%	-8.95%
NHS Orkney	£294,507	4,370,775	£367,325	4,443,459	£521,915	3,437,414	£338,814	4,176,342	21.50%	-4.45%
NHS Shetland	£477,291	3,859,197	£415,900	3,845,427	£502,417	3,700,692	£506,266	3,420,817	-7.56%	-26.00%
NHS Tayside	£6,618,783	173,409,677	£9,578,954	171,873,617	£9,799,341	164,672,435	£9,925,199	158,383,012	-3.82%	-8.67%
NHS Western Isles	£792,794	10,423,551	£1,035,947	10,093,859	£1,941,689	10,283,870	£969,610	9,563,407	-7.01%	-8.25%
NHS National Waiting TC	£1,590,185	38,817,786	£2,378,604	39,419,329	£2,572,131	39,352,709	£2,318,312	36,578,314	-7.05%	-5.77%
The State Hospitals	£779,362	11,346,441	£892,531	10,876,557	£793,028	9,831,750	£724,555	9,396,327	-4.43%	-17.19%
TOTAL	**£72,311,800**	**1,660,510,307**	**£104,689,012**	**1,720,630,602**	**£105,294,356**	**1,589,551,564**	**£100,602,213**	**1,530,253,529**	**-3.73%**	**-4.66%**

It should be noted that reporting year 2014/15 was milder in temperature than both 2013/14 and the first reporting year of 2010/11, and this may account for the decrease in consumption in 2014/15. It is also important to take into account changes in the size of the estate. Between reporting years 2013/14 and 2014/15, there was a 0.12% increase in the reported hospital estate areas (and a 5.62% increase since 2010/11). Therefore, it is more accurate to consider a performance indicator of energy consumption per m^2 when reviewing relative energy performance.

During 2014/15, the average energy performance across the NHSScotland hospital estate was 426.1 kWh/m^2 – a 3.85% reduction over the previous reporting year, and a 9.73% reduction since 2010/11.

The table that follows shows energy KPI performance for each Board since 2010/11.

Board	2010/11	2011/12	2012/13	2013/14	2014/15		
	kWh/m2	kWh/m2	kWh/m2	kWh/m2	kWh/m2	% change since 2013/14	% change since 2010/11
NHS Ayrshire & Arran	360.3	324.6	348.9	359.0	342.4	-4.61%	-4.94%
NHS Borders	431.7	389.8	407.7	380.6	363.6	-4.47%	-15.78%
NHS Dumfries & Galloway	557.7	533.9	520.0	508.1	472.9	-6.94%	-15.22%
NHS Fife	422.3	386.6	461.5	419.1	401.3	-4.26%	-4.97%
NHS Forth Valley	463.9	389.3	407.1	454.8	442.9	-2.62%	-4.52%
**NHS Grampian	525.3	511.6	588.1	604.5	591.4	-2.17%	12.57%
NHS Greater Glasgow & Clyde	494.9	469.9	503.5	435.9	407.4	-6.56%	-17.69%
NHS Highland	419.5	388.4	421.9	444.8	491.2	10.44%	17.10%
NHS Lanarkshire	481.7	463.2	499.9	418.8	380.4	-9.18%	-21.03%
NHS Lothian	491.6	473.9	516.1	392.2	367.5	-6.29%	-25.24%
*NHS Orkney	552.3	532.2	536.6	436.7	530.6	21.50%	-3.94%
*NHS Shetland	387.2	372.2	479.9	470.3	434.7	-7.56%	12.28%
NHS Tayside	404.8	383.6	399.7	435.7	454.1	4.22%	12.18%
NHS Western Isles	597.0	559.6	578.1	481.5	447.7	-7.01%	-25.00%
*NHS National Waiting T.C.	735.5	706.8	746.9	664.6	617.7	-7.05%	-16.02%
* ***The State Hospital	739.5	486.3	456.5	416.6	398.1	-4.43%	-46.17%
TOTAL	**472.1**	**445.9**	**481.6**	**443.3**	**426.2**	**-3.85%**	**-9.73%**

Table notes: *Board data based on single hospital site.

**During 2011/12, a new large-scale CHP system was installed at a site in NHS Grampian. This resulted in more kWH being used, but has significantly reduced GHG emissions.*

***During 2011/12, the State Hospital underwent considerable refurbishment, including the installation of a new biomass boiler*

HEAT Target Performance

In 2014/15, NHS Boards continued to report their hospitals' energy consumption and GHG emissions under the HEAT Target (Phase 2)[1]. This requires a year-on-year energy efficiency improvement of 1% on all energy sources based on an overall improvement by 2050 of 33% (or one third) on the comparative performance as at the 2009-10 baseline year. This equates to a 10% reduction in energy performance by 2020. For 2014/15, NHS Boards had to achieve a 4.34% reduction in energy consumption compared with 2009/10.

The HEAT Target also requires NHS Boards to achieve a 3% year-on-year reduction in carbon dioxide (CO_2) emissions from fossil fuels only, based on a 2009/10 baseline. For 2014/15, NHS Boards had to achieve a 4.34% reduction in energy consumption compared with 2009/10.

Note that the HEAT Target figures will be different to those presented above. This is because the dataset used does not consider all the same sites, weather correction is applied, and the impact of site disposals/ additions is not included.

The HEAT Target performance figures for 2014/15 showed that NHS Boards' hospital sites reduced their energy consumption by 4.62% against the baseline year - 0.34% better than target. In the same period, CO_2 emissions from fossil fuel use were reduced by 5.95% against the baseline year – 6.91% worse than target. The poorer CO_2 performance was in part due to the ongoing operation of a large Combined Heat and Power (CHP) plant at NHS Grampian's main hospital site. As the current HEAT target calculation method does not include GHG emissions from electricity, the positive impact of the CHP on overall emissions cannot be demonstrated.

Future Plans: Energy

Financial year 2014/15 marks the end of the current HEAT Target reporting cycle for energy consumption and GHG emissions. Going forward, energy and GHG performance will be reported on the whole estate (as opposed to hospitals only) and will follow the method outlined in the Scottish Public Sector Mandatory Climate Change Reports. In support of this, a new energy monitoring and targeting system – eSight – has been procured for NHSScotland Boards. This will facilitate more accurate recording and reporting of energy consumption and associated GHG emissions, and as the system uploads metered data automatically, it will allow more proactive energy management across the estate.

[1] The Health Efficiency Access Treatment target E8 applies to hospital sites only. Data is weather corrected at site level. Therefore, these figures cannot be compared directly with data from ISD Cost Book.

This publication is available at **www.gov.scot**

Any enquiries regarding this publication should be sent to us at
The Scottish Government
St Andrew's House
Edinburgh
EH1 3DG

ISBN: 978-1-78851-116-2 (web only)

Published by The Scottish Government, July 2017

Produced for The Scottish Government by APS Group Scotland, 21 Tennant Street, Edinburgh EH6 5NA
PPDAS272086 (07/17)