

# What is driving the rising costs of specialised services?

A quantitative analysis produced for the  
NHSE Midlands Region

November 2020

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Commissioning Support Unit

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Note: In this paper we use the terms:

- **specialist** to mean possessing a high level of expertise;
- **specialist centre** to mean a healthcare facility that provides specialist teams and non-standard equipment;
- **specialised** to refer to the commissioning models used by NHS England to deliver services for rare and complex conditions.

The question posed in the title of this document comes from a sub-heading in the National Audit Office (NAO) report, *The commissioning of specialised services in the NHS*.<sup>1</sup> The following analysis offers a quantitative perspective on this issue.

This is one of two reports produced by the Strategy Unit looking at Specialised Services in the Midlands region. The companion report, *Equity of Access to Specialised Services*, examines the geographic inequity in the supply of specialised services.

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<sup>1</sup> *The commissioning of specialised services in the NHS* (2016). National Audit Office.

# Summary

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## Background

NHS specialised services provide care for people with complex or rare medical conditions. Treatments for these conditions are often expensive: While specialised services support a small proportion of the population, approximately one-sixth of the total NHS budget - over £19 billion - was allocated to this area in 2019/20. Moreover, in recent years, specialised services have been consuming an increasing share of the NHS budget whilst high-demand services such as community nursing and primary care have seen their share of the budget shrink.

These circumstances have led to questions about resource allocation across the healthcare system and the factors that have contributed to specialised services' funding growth. In 2016, a report by the National Audit Office (NAO), *The Commissioning of Specialised Services in the NHS*, examined spending on specialised care and assessed whether these services were delivering value for money. The report listed several factors which were likely to be creating financial pressures in this area. These factors included the increasing use of high-cost drugs and devices, rising demand, and new, more effective products replacing older ones. The report also stressed that the information needed to drive improvements in specialised services was lacking.

## Our analysis

In this report, we adapt the NAO framework to estimate the contributions of factors which are driving the rising costs of specialised services in the Midlands. Whilst, historically, the quality and coverage of specialised activity data has been poor, recording has improved in recent years. Our report therefore examines cost growth over a two-year period (ending in 2019/20) and covers a subset of specialised activity in which the data were robust enough to support analysis. This subset - our activity sample - includes admitted patient and outpatient activity but does not capture the influence of high-cost drugs. Despite these limitations, we believe valuable insights can be derived from the study.

## High-level findings

Over the last half-decade, the national budget for specialised services has risen by an average of 8% per year. Within our activity sample - which covers the final two years of this period - the biggest driver of cost growth

was a rise in unit prices paid to the provider. These unit prices are dictated by NHS England's National Tariff Payment System and should broadly reflect the costs incurred by providers. It appears that several adjustments to the tariff in the last two years have had a telling effect on cost growth. Two examples of these changes include:

- increases in the tariff for high-cost, low-volume neurosurgery; and
- increases in the tariff for high-volume, low-cost cancer-related outpatient attendances.

It may be that adjustments such as these were corrective (addressing previously under-priced activities), in which case we would not anticipate unit prices to contribute heavily to cost growth in the coming years. However, if such changes in the tariff are routine, cost growth may continue to be driven by these increases in unit price.

A second key factor driving the cost growth of specialised services has been a change in services' procedure mix. In other words, given the presenting case-mix, service responses have been increasingly resource-intensive and costly. Adoption of new procedures, however, accounts for only a small part of the growth in this area.

In addition to the influence of unit prices and procedure mix, we see the modest but sustained contribution of demographic change (increasing specialised services costs by 1% each year). This level of influence is comparable to the demographic effect found in other types of health service provision.

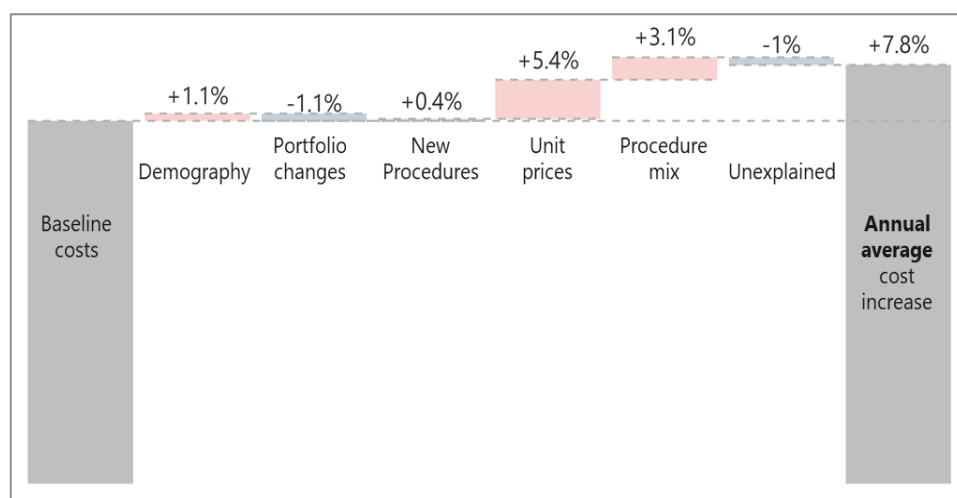


Figure 1: Average annual contribution of factor to the cost growth of specialised services.

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These cost growth factors appear to have been weakly moderated by a contraction of the specialised portfolio and by influences we could not explicitly measure (including, we believe, commissioner control of activity growth). It is worth noting, however, that portfolio contraction is unlikely to result in significant cost savings for the NHS as a whole: Activity dropped from the specialised portfolio is picked-up by local commissioning groups.

### **Variation by programme and point of delivery**

While there are broad themes in the cost growth of specialised services overall, we see substantial variation in growth by National Programme of Care (NPoC) and point of delivery:

- For Internal Medicine: Demographic changes have had a larger influence on cost growth than for other NPoCs.
- For admitted-patient care (APC) cancer services: There has been a notable change in the procedure mix. Put another way, cancer services' response to the presenting case mix has been increasingly resource intensive. Moreover, the cost impact of new procedures has been larger than elsewhere.
- For APC Trauma: Substantial growth in the portfolio, in addition to a rise in unit costs and in average procedure complexity has resulted in a large overall cost growth.
- Outpatient cost growth, meanwhile, has been almost entirely driven by the rise in the unit costs of cancer-related attendances.

### **Conclusion**

Due to the limited coverage of the data sources, this analysis was based on a subset of the region's specialised services activity. We cannot therefore guarantee that our findings will generalise to the wider specialised commissioning portfolio. However, the messages we have drawn out are relevant despite the noted limitations, and we would hope that our findings encourage continued improvements in specialised commissioning.

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## Recommendations

**Commissioners and providers should work together to understand both the drivers of unit cost growth and services' increasingly complex responses to the presenting case-mix.** These two factors are major drivers of cost growth, but it is unclear if they have arisen through a deliberate, holistic, and rational decision-making process. In future, cost increases of this type should be supported only where there is clear evidence that they will lead to an adequate increase in value, and where equivalent investments in aligned or alternative service areas would not generate greater value. Portfolio shrinkage and commissioner attempts to constrain activity growth have not been sufficient to offset the growth associated with rising unit costs and increasing procedure complexity.

**This analysis should be repeated when a greater proportion of the specialised commissioning spend can be examined.** Providers are now required to report their specialised activity in the Contract Monitoring information standards. The coverage and quality of specialised data has therefore improved considerably. Within the next two years, it should be possible to repeat this analysis on a greater proportion of the specialised commissioning spend and examine the cost growth associated with high-cost drugs and devices.

# 1. Introduction

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## 1.1 Context: The cost growth of specialised services

Commissioned by NHS England (NHSE), specialised services support people with complex or rare medical conditions. Treatments for such conditions often utilise the newest medical technologies and may require specialist teams operating in specialist centres. Consequently, this care tends to be expensive: While specialised services support a modest proportion of the population, approximately one-sixth of the total NHS budget) - over £19 billion - was allocated to this area in 2019/20 (Fig. 2 and Fig. 3). Moreover, it has been widely noted that, in recent years, the funding for specialised services has grown more rapidly than for other NHS services:<sup>2,3</sup> Indeed, primary care and community nursing have seen their share of the NHS budget shrink despite continued demand pressure.<sup>4,5</sup> These circumstances prompt questions about resource allocation and the factors that have led to specialised services funding growth.

The purpose of this analysis is to estimate the contribution of factors which are driving the rising costs of specialised services in the NHSE Midlands region. An understanding of the factors contributing to this cost growth will help the NHS:

1. Determine whether the continued redistribution of expenditure away from the core NHS provision is appropriate, and
2. Ensure that the allocation of resources within specialised services is efficient.

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<sup>2</sup> *The commissioning of specialised services in the NHS* (2016). National Audit Office.

<sup>3</sup> <https://www.england.nhs.uk/commissioning/spec-services/>

<sup>4</sup> *NHS England Funding and Resource 2017-19: supporting 'Next Steps for the NHS Five Year Forward View'* (2017). NHS England.

<sup>5</sup> *Understanding NHS financial pressures: how are they affecting patient care?* (2017). The King's Fund.



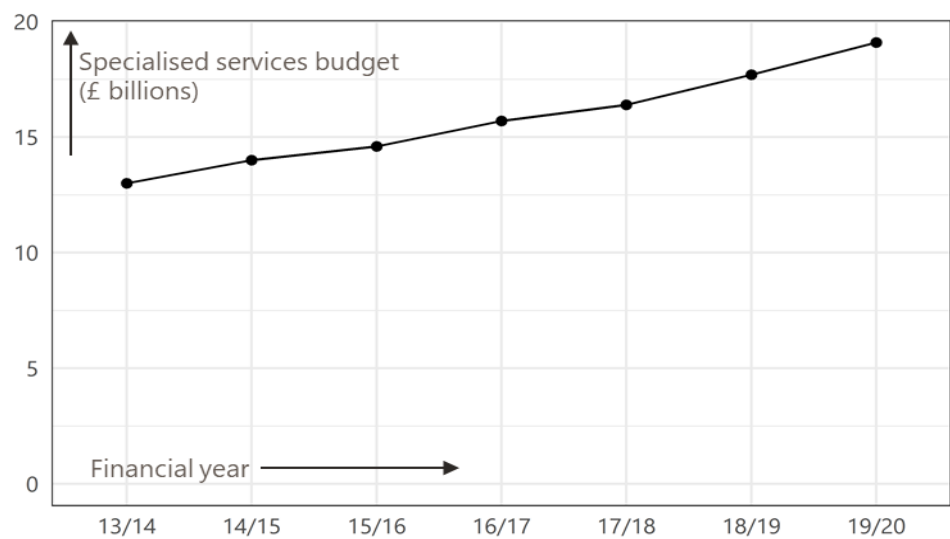


Figure 2: The budget for NHS specialised services has increased by an average of 8% per year since 2013/14.<sup>6</sup>

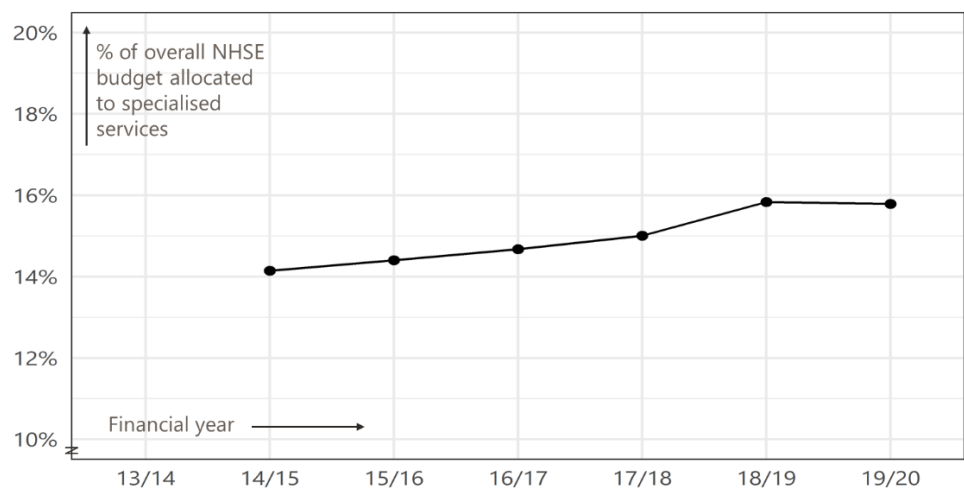


Figure 3: In recent years, the proportion of the NHS budget allocated to specialised services has risen from 14% to 16%.<sup>7</sup> Such an increase will affect the resources available to other areas of the health service, for example General Practice and non-specialised services.

<sup>6</sup> Derived from:

- *The commissioning of specialised services in the NHS* (2016). National Audit Office.
- *NHS England Funding and Resource 2017-19: supporting 'Next Steps for the NHS Five Year Forward View'* (2017). NHS England.
- *NHS England and NHS Improvement funding and resource 2019/20: supporting 'The NHS Long Term Plan'* (2019). NHS England and NHS Improvement.

<sup>7</sup> Ibid.

## 1.2 How are specialised services organised and delivered?

Approximately 150 service lines make up NHS specialised services. Service lines oversee treatments for specific diseases, or for a number of closely related conditions.

Each service line belongs to a Clinical Reference Group (CRG). CRGs provide clinical advice and leadership several (related) service lines.

In turn, CRGs belong to one of six National Programmes of Care (NPoCs). These programmes oversee the commissioning and delivery of a broad range of services.

These different levels of organisation are shown in Fig. 4.

Specialised services may be delivered in a range of settings within admitted patient care (APC) or via outpatient (OP) consultations.

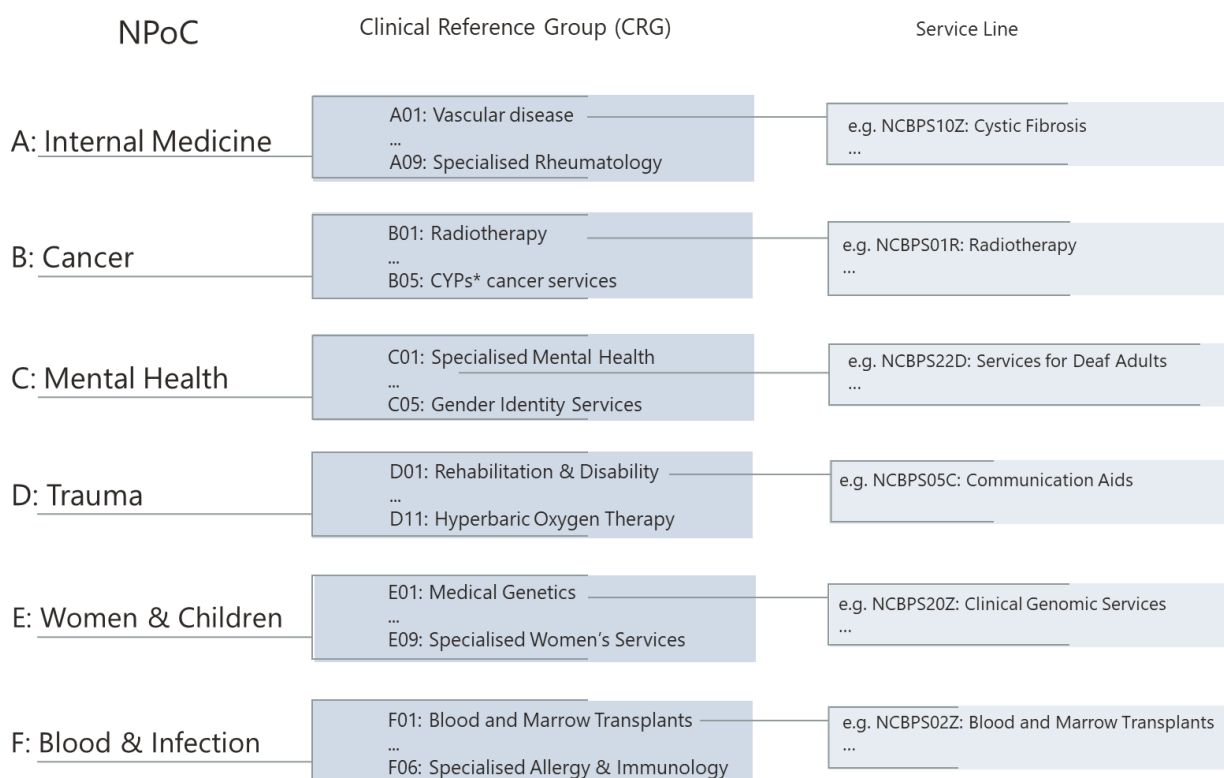


Figure 4: The organisation of specialised services in 2019/20

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## 1.3 How is specialised activity identified?

Each year, NHSE provides a suite of resources to support the commissioning of specialised services. Some of these resources specify how specialised activity will be distinguished from non-specialised activity in the standard data flows. APC and OP activity is classified as “specialised” if it meets criteria set out in the NHSE Identification Rules.<sup>8</sup> Payment for services identified as “specialised” will come from NHSE, rather than from the budget of local Clinical Commissioning Groups (CCGs).

## 1.4 What factors may be driving the rising cost of specialised services?

National spending on specialised services has grown by an average of 8% a year over the last six years.<sup>9</sup> Factors responsible for the rising cost of delivering these services may include:<sup>10</sup>

- i. **A changing demographic structure:** The growing number of older people has led to a rise in the numbers seeking treatment for age-related diseases (e.g. cancer).
- ii. **Changes to the specialised services portfolio:** Provider activity – as recorded by the standard data flows – is classified as “specialised” if it meets criteria set out in the Identification Rules. NHSE will change these rules (often on an annual basis) as services and organisations evolve. At the turn of a year, new treatments and services may be added to the specialised portfolio while others will lose their “specialised” status. Payment responsibility for activity classified as specialised rests with NHSE (and they will draw from the specialised budget). Non-specialised activity is paid for by local CCGs.

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<sup>8</sup> *Manual for Prescribed Specialised Services 2018/19* (2018). NHS England. Note: From 2019/20 these rules have been integrated into a spreadsheet tool.

<sup>9</sup> Derived from:

- *The commissioning of specialised services in the NHS* (2016). National Audit Office.
- *NHS England Funding and Resource 2017-19: supporting 'Next Steps for the NHS Five Year Forward View'* (2017). NHS England.
- *NHS England and NHS Improvement funding and resource 2019/20: supporting 'The NHS Long Term Plan'* (2019). NHS England and NHS Improvement.

<sup>10</sup> Here we adapt the NAO framework in, *The commissioning of specialised services in the NHS*, which details factors which may be driving the rising costs of specialised services.

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- iii. **An increase in the number of services located at specialist centres:** This may lead to an increase in the volume of activity which satisfies the Identification Rules and is thus classified as “specialised”.
  - iv. **New (high-cost) drugs, devices, and procedures:** New technologies are likely to both increase the number of conditions that may be treated and allow patients to be treated further into their illness. Existing treatments also benefit from these advances as old is replaced by new, more effective, technology.
  - v. **Rising unit costs:** The unit cost of a specified activity is likely to change over time, due to the changing cost of the components of that activity (e.g. staff costs, staff time per patient, number of tests and images required).
  - vi. **Changes to the case mix:** The cohort treated by specialised services at the current time may, on average, be older and sicker than cohorts from previous years.<sup>11</sup> The current cohort are therefore likely to require more resource-intensive treatments than their predecessors.
  - vii. **Changes to the procedure mix:** Activity involving the most resource-intensive procedures may make up a greater share of the overall activity than in previous years. Put another way, the healthcare system’s response to the presenting case mix may require more (or fewer) resources than in the past.
  - viii. **More effective diagnoses:** While this may decrease the number of tests and procedures needed to diagnose individuals with rare or complex illnesses (potentially lowering cost), there is also the likelihood that more individuals from the population will be diagnosed. The probable result is a rise in the numbers treated for rare or complex conditions; the cost of which is likely to outweigh savings due to diagnosis efficiency.
  - ix. **An increasing public awareness of services offered:** This will, most probably, increase demand for services.

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<sup>11</sup> We have already captured the age-related component of case mix in point i of this list.

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- x. **Policy:** Healthcare policy and political priorities will influence spending across the NHS. For example, the diagnosis and treatment objectives for cancer set out in the NHS Five Year Forward View<sup>12</sup> have, almost certainly, increased cancer-related activity in recent years.

There are, of course, effects that *moderate* the rising cost of services. For example, a commissioner may make savings by rationing services, by realising more efficient management structures, or by implementing “upstream” initiatives focussed on prevention. In addition, NHSE and NHS Improvement may incentivise providers to improve the efficiency of their services by adjusting the prices paid for each unit of activity.<sup>13</sup>

In the section that follows, we explain our approach to estimating the contribution of the factors above to the cost growth of specialised services. Where the data allows, we estimate the effect explicitly. In other cases, the effect is contained in a residual, “catch-all”, category.

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<sup>12</sup> *Five Year Forward View* (2014). NHS England, Monitor, NHS Trust Development Authority, Care Quality Commission, Public Health England, and Health Education England.

<sup>13</sup> *2019/20 National Tariff Payment System* (2019). NHS England and NHS Improvement.

## 2. Analytical Approach

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### 2.1 The data sources and their limitations

The proposed analysis required basic information about patients accessing specialised services, along with simple details of the care they received and the cost of that care. We examined two potential sources of this information:

- i. The Secondary Uses Service (SUS) data repository,<sup>14</sup> and;
- ii. The Contract Monitoring Information Standards.<sup>15</sup>

Neither source, however, offers a comprehensive record of specialised activity in recent years<sup>16</sup>:

- The SUS repository provides rich, high quality datasets for APC and OP points of delivery. Yet, the total costs allocated to specialised activity were not of the correct order of magnitude, and drug and device costs are missing.
- The Contract Monitoring Information Standards provide tables which cover specialised patient-level activity (PLCM), as well as high-cost drugs (DrPLCM), and devices (DePLCM). Cost information closely matches official summary figures<sup>17</sup> but, as reporting to these standards has only recently become mandatory,<sup>18</sup> the quality and consistency of information relating to the patient, and their care, has been poor. This last point is especially true for the high-cost drugs and devices tables.

In addition to the above differences, there were discrepancies in the activity recorded by the two sources at the CRG level. In several cases, SUS datasets reported many fewer episodes than were observed in the PLCM data. Due to this last point, and the fact that SUS cost data were unreliable, we regarded the PLCM data as the benchmark for activity counts and costs.

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<sup>14</sup> <https://digital.nhs.uk/services/secondary-uses-service-sus>

<sup>15</sup> <https://www.england.nhs.uk/nhs-standard-contract/dc-reporting/>

<sup>16</sup> From 2019/20 there is a notable increase in quality and coverage of specialised data, but, to examine cost growth, it was necessary to look at the years prior to this.

<sup>17</sup> From <https://www.england.nhs.uk/commissioning/spec-services/>

<sup>18</sup> <https://www.england.nhs.uk/nhs-standard-contract/dc-reporting/>

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## 2.2 How the limitations of the data sources affect the scope of this analysis

Due to the shortcomings detailed above, we identified a subset of the specialised services spend where the data were available and sufficiently robust to support the proposed analysis. We therefore stress that:

- **This analysis covers cost growth over a two-year period**

As noted above, the Contract Monitoring Information Standard tables appear to be the only reliable source of cost data at the level required. However, these standards are relatively new and coverage before the 2017/18 financial year is narrow. Thus, we used 2017/18 costs as our baseline, while 2019/20 data allowed us to estimate the cost growth after two years.

- **This analysis does not include the spend associated with high-cost drugs and devices**

High-cost drugs are known to contribute significantly to the cost growth of specialised services.<sup>19, 20</sup> However, the historic coverage of the DePLCM and DrPLCM tables was so poor that we were unable to include the impact of drugs and devices in this analysis.

- **This analysis does not include specialised Mental Health services**

Despite the importance of mental health services, we were not able to include these in the analysis due to low levels of recorded activity in the chosen data sources.

- **This analysis is based on 58% of APC costs and 75% of OP costs recorded by the PLCM in the years examined**

Activity from Critical Care and the Blood & Infection NPoC were among subsets excluded from the analysis due to data quality. Further details are given in the Methods sub-section that follows.

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<sup>19</sup> *The commissioning of specialised services in the NHS* (2016). National Audit Office.

<sup>20</sup> *2017/18 and 2018/19 National Tariff Payment System* (2017). NHS England and NHS Improvement.

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## 2.3 Methods

We were ultimately obliged to build our analysis around SUS data due to the sporadic recording of patient information in the PLCM tables. To overcome the problems with specialised activity costs recorded in SUS (noted above), we applied year-and-CRG-specific median Healthcare Resource Group (HRG) prices from the PLCM table.

Our initial task was to reconcile activity counts, at CRG level, from the two data sources. This involved removing subsets of data that appeared to be absent from one or other of the sources. In this way, we maximised the chances of applying appropriate median costs to each CRG group in the SUS data. In cases where there was a large (proportional) discrepancy in the reported CRG activity – and which could not be addressed using the above method – we omitted the CRG from the analysis. For the remainder of this analysis we will refer to the dataset which was the outcome of this process as, “the SUS sample.”

Fig. 4 and Fig. 5 (shown overleaf):

1. Give an indication of the relative sizes of the NPoCs, in terms of activity and cost recorded by the two data sources; and
2. Show the proportion of PLCM activity and cost data that we captured in the SUS sample.



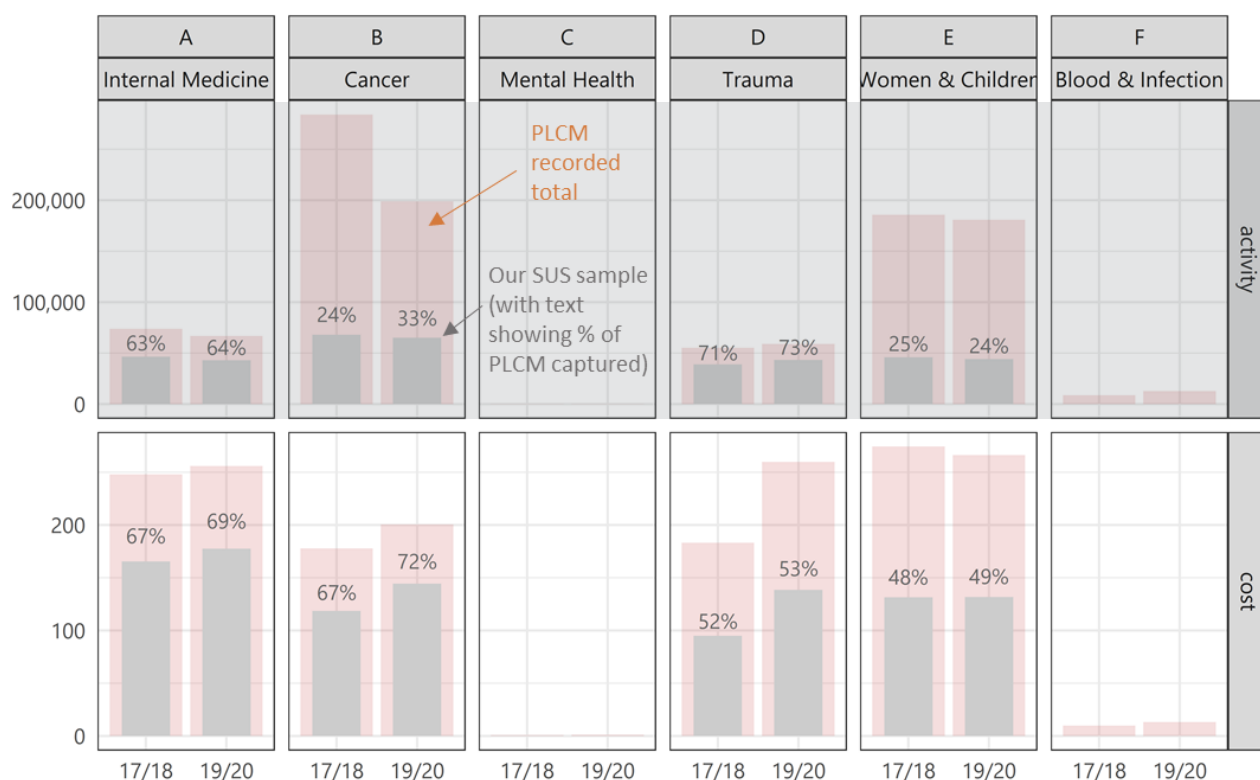


Figure 5: A comparison of APC activity (top row) and costs (bottom row) for each NPoC, as recorded by the PLCM extract (red bar) and our SUS sample (grey bar).

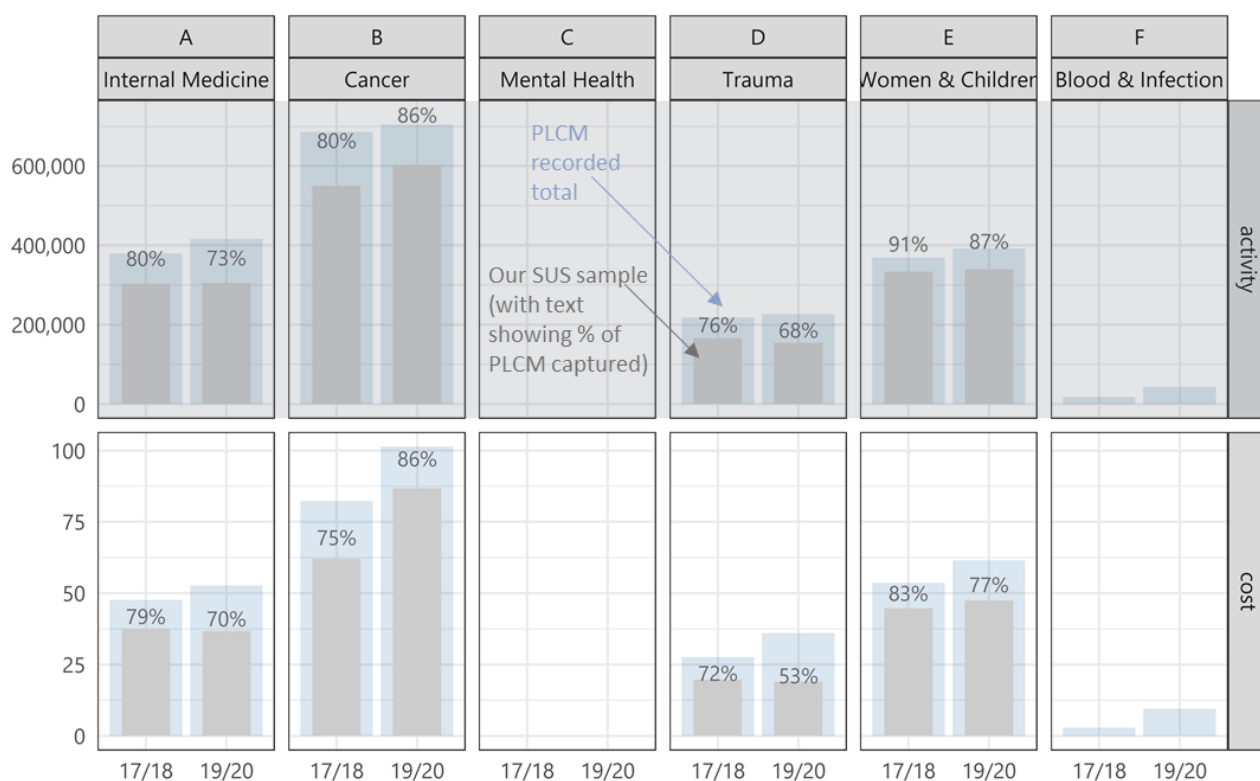


Figure 6: A comparison of OP activity (top row) and costs (bottom row) for each NPoC, as recorded by the PLCM extract (blue bar) and our SUS sample (grey bar).

Having defined an appropriate subset of the data (our SUS sample), we used waterfall charts (example in Fig. 7 below) to visualise the cumulative influence of the factors which are driving the rising costs of specialised services. Each chart in the analysis examines the change in nominal costs between 2017/18 (point 0) and 2019/20 (point 7) for a particular NPoC and point of delivery (i.e. APC, OP) combination. Calculations were conducted at CRG level and the results have been presented at NPoC level.

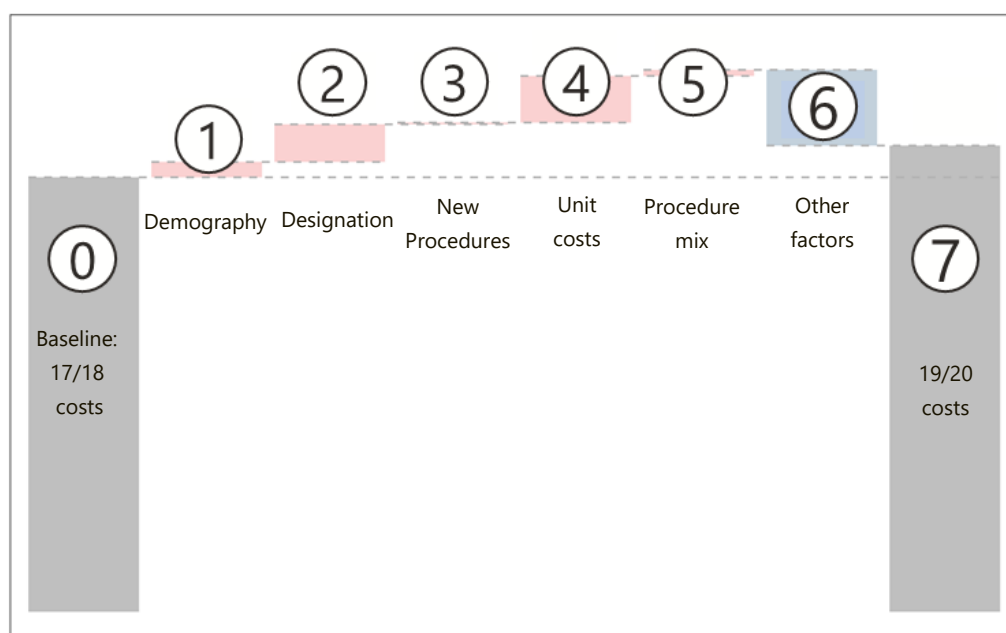


Figure 7: Example waterfall chart displaying factors influencing the cost growth of specialised services

The influences which we were able to estimate explicitly were:

1. **The demographic effect:** How did the changing age and gender structure of the population influence costs?

*Derivation: We took the costs for each age and gender stratum in the baseline year and multiplied these by the percentage growth in the population for the corresponding age and gender. These costs were summed across all strata. The result gives the total cost we might expect due to population growth alone. Note: Assumes age-sex specific rates remain constant over time.*

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2. **Changes to the specialised services portfolio:** How did changes to the set of services classed as “specialised” affect overall costs? (This includes the introduction of new service lines.)

*Derivation: There are several ways in which the make-up of the specialised portfolio may change over a period:*

1. *A service may be added to the specialised portfolio.*
2. *A service may be removed from the specialised portfolio.*
3. *A service may remain in the portfolio but:*
  - a. *Be moved into NPoC X from NPoC Y, or;*
  - b. *Be moved out of NPoC X into NPoC Y.*

*We first examined 19/20 activity, by NPoC group, and identified how it would have been assigned given both the 17/18 and 19/20 Identification Rules. For each NPoC, we summed the cost of activity for which there was no assigned 17/18 NPoC category (an indication of point 1, above), or for which the activity had changed NPoC category (covers point 3a). The outcome may be seen as the increase in costs due to portfolio changes. We will call this result, List A.*

*We then examined 17/18 activity, by NPoC group, and identified how it would have been assigned given both 17/18 and 19/20 Identification Rules. For each NPoC, we summed the cost of activity for which there was no assigned 19/20 NPoC category (an indication of point 2), or for which the activity had changed NPoC category (covers point 3b). The outcome may be seen as the decrease in costs due to portfolio changes. We will call this result, List B.*

*Finally, we took the value for each NPoC in List A and from this subtracted the value for the corresponding NPoC in List B.*

3. **New procedures:** How did the introduction of new procedures (introduced to existing services) affect costs?

*Derivation: We had information on dominant procedures only. A dominant procedure was deemed to be “new” up to four years after its first appearance in the dataset. Having first removed new services*

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*(to avoid double counting), we calculated the cost difference of these new procedures between 17/18 and 19/20. Note that the release of OPCS-4.8 in April 2017 led to many new procedure codes. However, since we are taking the difference in the number of procedures between the baseline and final year, the distortion should not be substantial.*

4. **Changing unit prices:**<sup>21</sup> How have the prices paid (by the commissioner) for a unit of activity influenced cost growth over the period? (Note: This factor will include the effect of adjustments for inflation and efficiency targets.)

*Derivation: We applied both 17/18 and 19/20 HRG prices to 19/20 activity<sup>22</sup> and calculated the difference.*

5. **Changing procedure mix:** Have we seen an increase in the proportion of activity which contains the most resource-intensive procedures?

*Derivation: We calculated the difference between the cost, by HRG, due to the observed 19/20 activity and the cost we might expect if the HRG had seen activity growth at the overall NPoC rate. If the sum of observed costs is greater than the counterfactual level, then this indicates that there has been an overall shift to the more resource intensive (and - we infer – the more complex) activities.*

Influences we could not explicitly estimate fall into a catch all category:

6. **Unexplained factors:** This may, for example, measure the effect of commissioner initiatives to constrain activity growth or the impact of policy changes.

*Derivation: The difference between the 17/18 costs plus factors 1-5 (above), and the observed 19/20 cost.*

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<sup>21</sup> The price paid by the commissioner for each unit of activity (unit price) may be different from the cost of providing the unit of activity (unit cost). Indeed, the 2016 NAO report, *The commissioning of specialised services in the NHS*, stated: "Research suggests that the price (tariff) that NHS trusts receive for each unit of care for specialised services does not fully reflect the cost of providing these services (more than 10% under)." Top up tariffs for certain services attempt to address this deficit.

<sup>22</sup> Where HRGs were available for both years

### 3. Results

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In this section, we present cost growth analyses which cover four of the six NPoCs. Within each NPoC, we look at the cost growth for both APC and OP points of delivery. We therefore have analyses for:

A: Internal Medicine (APC, OP)

B: Cancer (APC, OP)

D: Trauma (APC, OP)

E: Women & Children (APC, OP)

Each NPoC profile starts with a page detailing the CRGs included in our SUS sample, together with the age-gender breakdowns for this activity. We then use waterfall charts to illustrate the contribution of factors influencing cost growth.

At the end of this section, we present waterfall charts summarising cost growth for APC and OP points of delivery.

# A: Internal Medicine

The Internal Medicine NPoC covers treatments related to the circulatory system (heart, lungs, vascular system) and other organs (kidneys, stomach, liver, pancreas, and skin). Also included are services related to endocrinology and rheumatology, as well as the majority of organ transplant services. Most of the activity in the SUS sample involved those over the age of 60, with males aged over 70 being the most prominent group for both APC and OP activity (Fig. 8)

Internal Medicine is comprised of the nine CRGs shown in Table 1.

CRG	Total PLCM Recorded Activity (19/20)	
	APC	OP
Specialised Respiratory (A01)*	9,974	21,415
Hepatobiliary and Pancreas (A02)	14,578	25,977
Specialised Endocrinology (A03)**	160	20,913
Vascular Disease (A04)	1,872	22,344
Cardiac Services (A05)	28,668	251,523
Renal Services (A06)*	5,463	34,818
Specialised Colorectal Services (A07)**	2,161	69
Specialised Dermatology (A08)**	3,873	10,305
Specialised Rheumatology (A09)*	NA	28,204
Total	66,749	415,568

\* Not included in the analysis. \*\* Only one point of delivery included.

Table 1: Activity for the Internal Medicine NPoC by point of delivery. Financial year 2019/20.

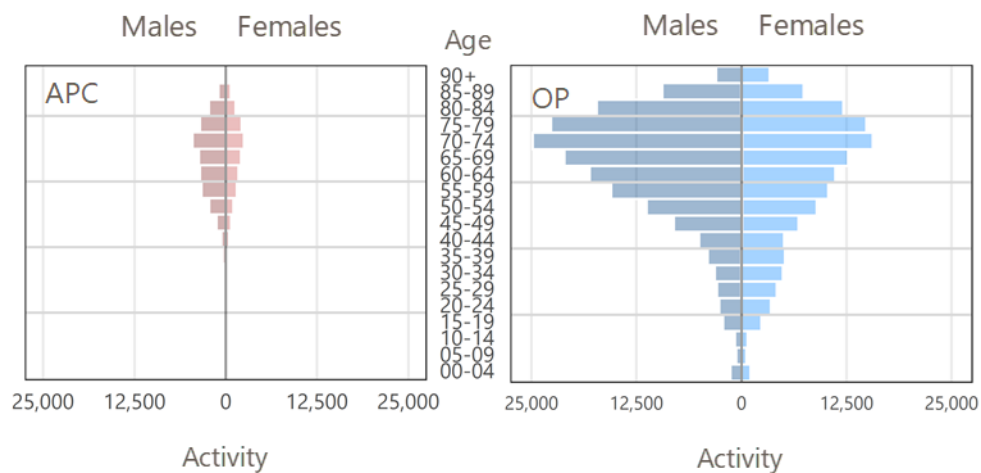


Figure 8: Pyramids show specialised Internal Medicine activity for APC (left) and OP (right), from the 19/20 SUS sample, by age and gender.

**Internal Medicine, APC (Fig. 9):** Nominal costs for the SUS sample rose by 7% in two years. The main factor driving cost growth seems to be an increase in unit prices. These rose by 7% above the standard adjustments to national prices (~4%) over the period. A shift towards more resource-intensive procedures (adding 5.6% to costs over two years) and demographic influences (adding 3.5%) have also had a notable impact. Meanwhile, both portfolio changes and “unexplained factors” had the effect of reducing costs. We expect that the latter may be capturing the effect of commissioner attempts to constrain activity growth.

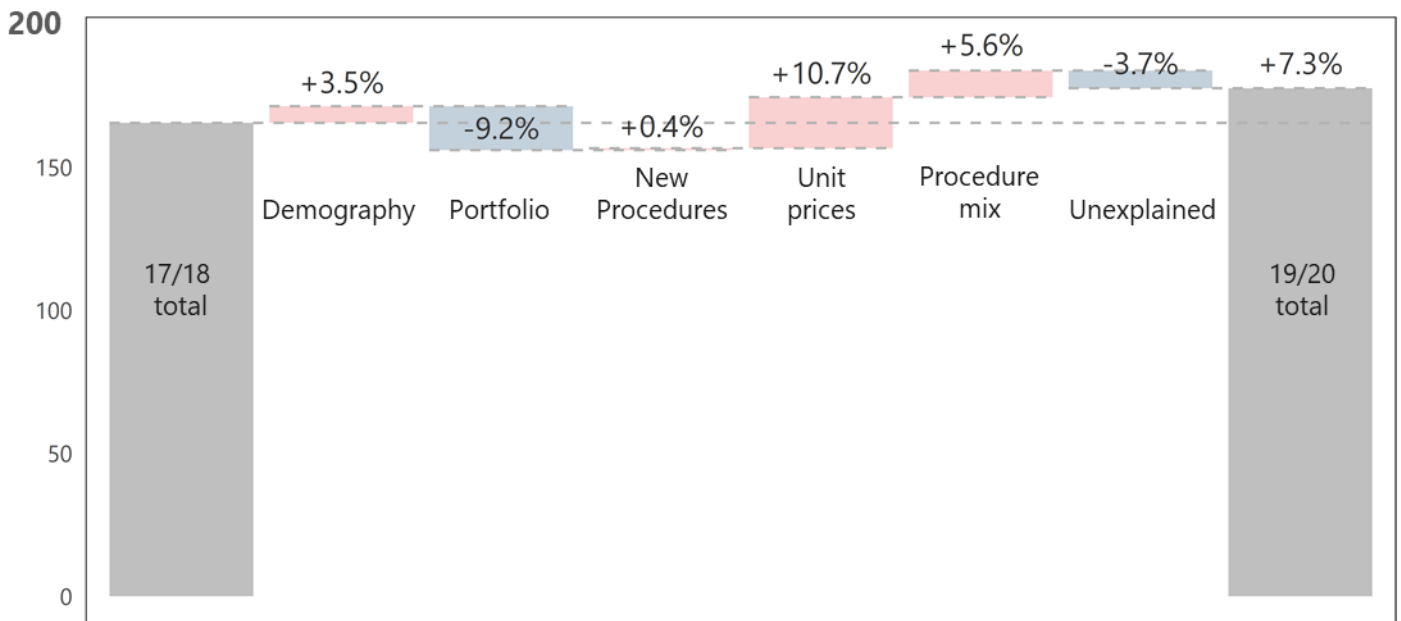


Figure 9. Cost growth analysis for admitted-patient care within the Internal Medicine NPoC.

**Internal Medicine, OP (Fig. 10):** Nominal costs for the SUS sample fell by 2% in two years. It appears that the rise in costs due to demographic factors (a fairly consistent 2-3% across all NPoCs and PoDs over the two years) has, in this case, been offset by the slight decreases in unit prices and average procedure complexity.

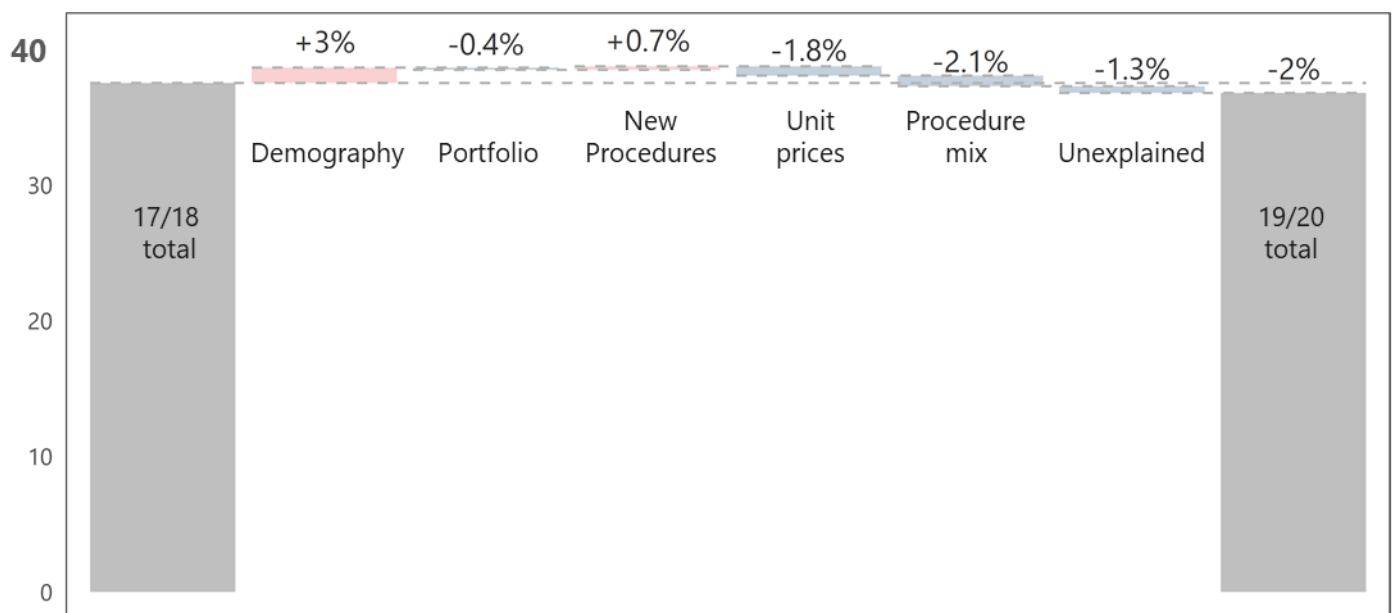


Figure 10. Cost growth analysis for the outpatient care within the Internal Medicine NPoC.

## B: Cancer

Cancer is the largest NPoC by volume of activity and is comprised of the four CRGs shown in Table 2. As previously noted, however, we have excluded Chemotherapy and Radiotherapy CRGs from the report due to data quality issues.<sup>23</sup> The majority of activity in the SUS sample involved those over the age of 60, with males and females being almost equally reliant on care (Fig. 11)

The Cancer NPoC is.

CRG	Total PLCM Recorded Activity (19/20)	
	APC	OP
Radiotherapy (B01)*	85	2,918
Chemotherapy (B02)*	116,884	20,907
Specialised Cancer Surgery (B03)	66,315	651,639
CYP Cancer Services (B05)	15,645	24,947
Total	198,937	704,412

\* Not included in the analysis. \*\* Only one point of delivery included.

Table 2: Activity in the Cancer NPoC by point of delivery. Financial year 2019/20.

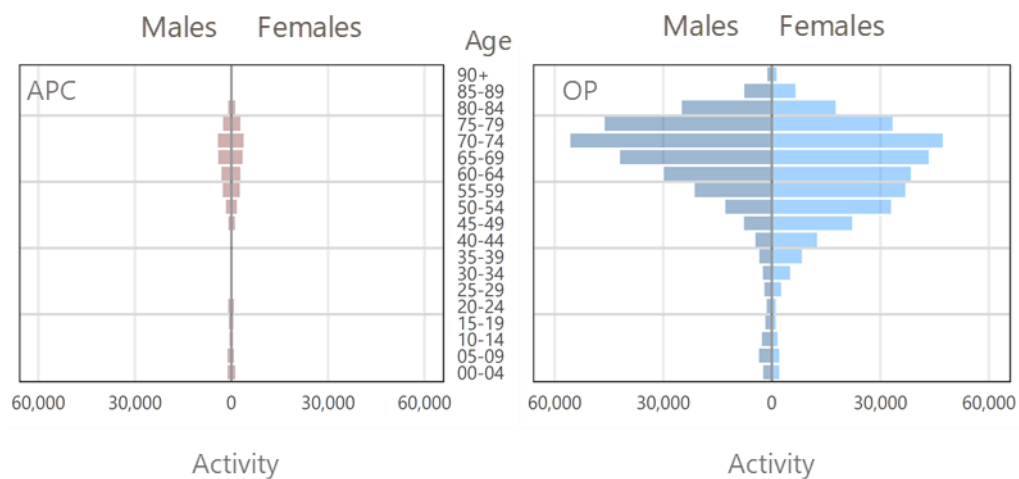


Figure 11. Pyramids show specialised Cancer activity for APC (left) and OP (right), from the 19/20 SUS sample, by age and gender.

<sup>23</sup> This has notable effect on the APC analysis, where Chemotherapy (high-cost drugs) contributes heavily towards costs and cost growth.



**Cancer, APC (Fig. 12):** Nominal costs for the sample grew by over 20% in two years. The main factor driving cost growth, here, appears to be a shift to more resource-intensive procedures (adding 20% to costs). Changes to the specialised portfolio led to a 4% increase in costs for this NPoC, while new procedures added 2% to costs. The rise in unit prices was greater than the standard adjustments to national prices. Meanwhile, “unexplained” factors have the net effect of reducing costs. This category may capture attempts to constrain or redirect activity; both Children’s Cancer and Rare Cancer services saw activity and costs fall in the APC environment but rise in the OP setting.

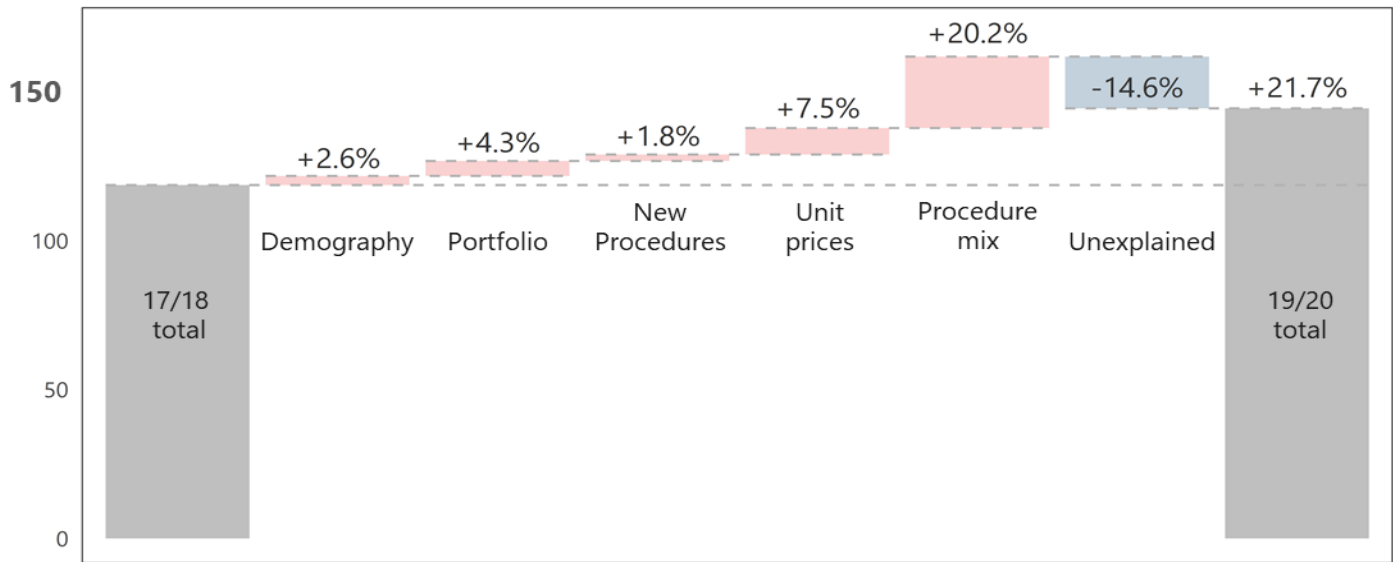


Figure 12. Cost growth analysis for admitted-patient care within the Cancer NPoC.

**Cancer, OP (Fig. 13):** Nominal costs for the sample rose by 40% in two years. Increasing unit prices appear to be the main factor driving this considerable cost growth. This may reflect the growing use of diagnostic tests and imaging, or an increase in the time spent with each patient, or that the activity was previously under-priced. Unexplained factors *add* to the overall cost, and it may be that national policy for cancer services is having an effect here.

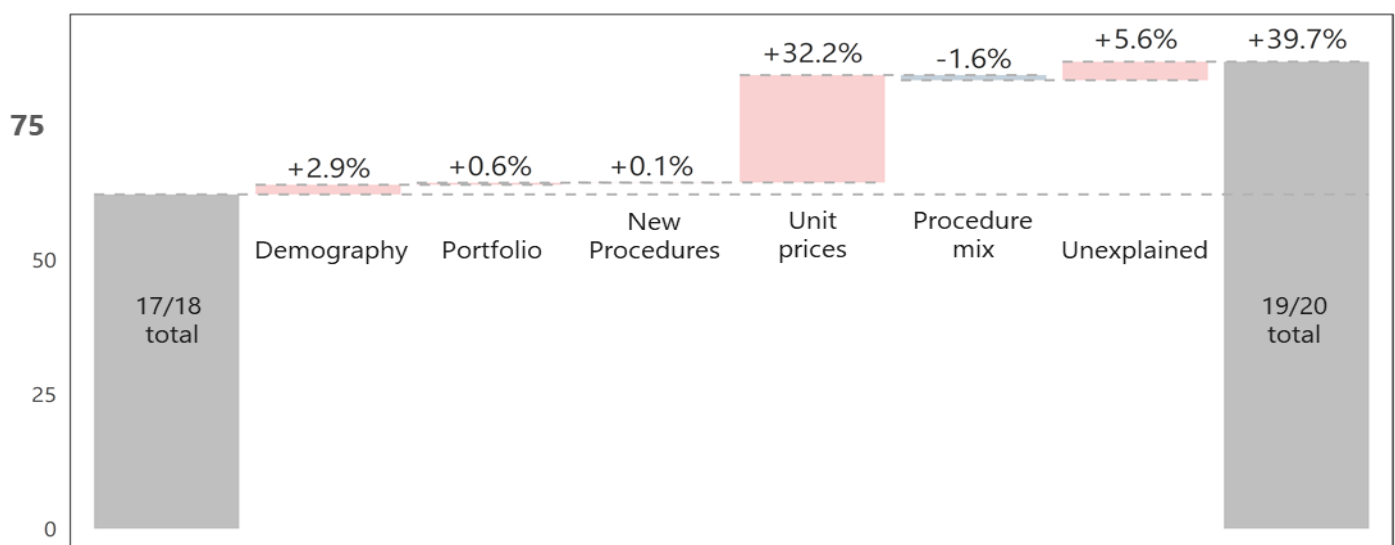


Figure 13. Cost growth analysis for the outpatient care within the Cancer NPoC.

# D: Trauma

The Trauma NPoC covers traumatic injury, orthopaedics, head and neck problems, neurosciences, and rehabilitation. For our SUS sample, APC activity is relatively evenly distributed across the age ranges (noting that traumatic injury to those under 19 years is likely classified in the Women & Children NPoC) (Fig. 14). By contrast, outpatient activity from our sample is primarily concerned with those under 19 years.

The Trauma NPoC is comprised of the CRGs shown in Table 3.

CRG	Total PLCM Recorded Activity (19/20)	
	APC	OP
Rehabilitation and Disability (D01)*	302	32,621
Major Trauma (D02)**	8,669	12,827
Spinal Services (D03)	4,159	5,852
Neurosciences (D04)	35,805	81,603
Adult Critical Care (D05)*	1,044	-
Specialised Ear and Ophthalmology (D06)	8,201	90,230
Specialised pain (D07)*	227	29,74
Specialised Orthopaedic Services (D10)**	532	3
Hyperbaric Oxygen Therapy (D11)*	3	-
Total	58,942	226,110

\* Not included in the analysis. \*\* Only one point of delivery included.

Table 3: Activity in the Trauma NPoC by point of delivery. Financial year 2019/20.

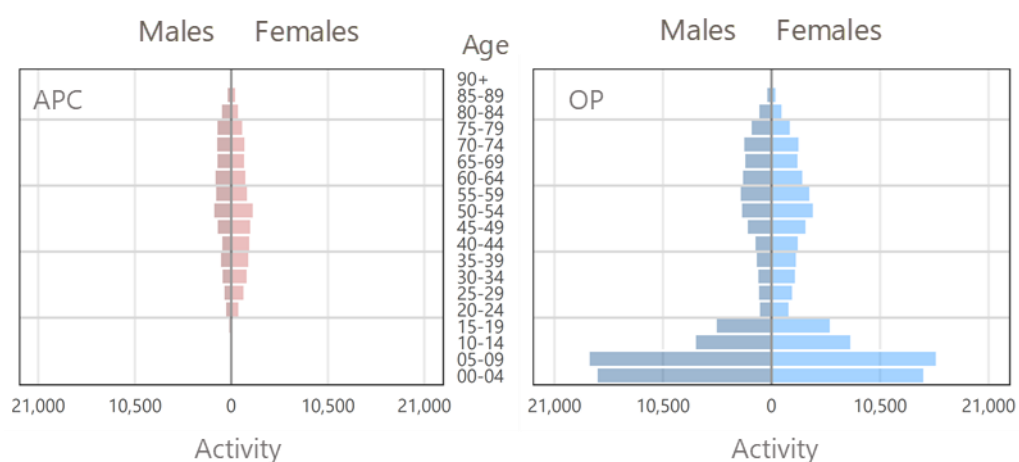


Figure 14: Pyramids show specialised Trauma activity for APC (left) and OP (right), from the 19/20 SUS sample, by age and gender.

**Trauma, APC (Fig. 15):** Nominal costs for the sample rose by close to 50% in two years. Rising unit prices increased costs by 21%, while a shift to more resource-intensive procedures accounted for 16% of the cost growth. Portfolio changes added 11% to costs for this NPoC. There was a small moderating influence from the unexplained factors, which again may capture attempts to constrain activity growth.

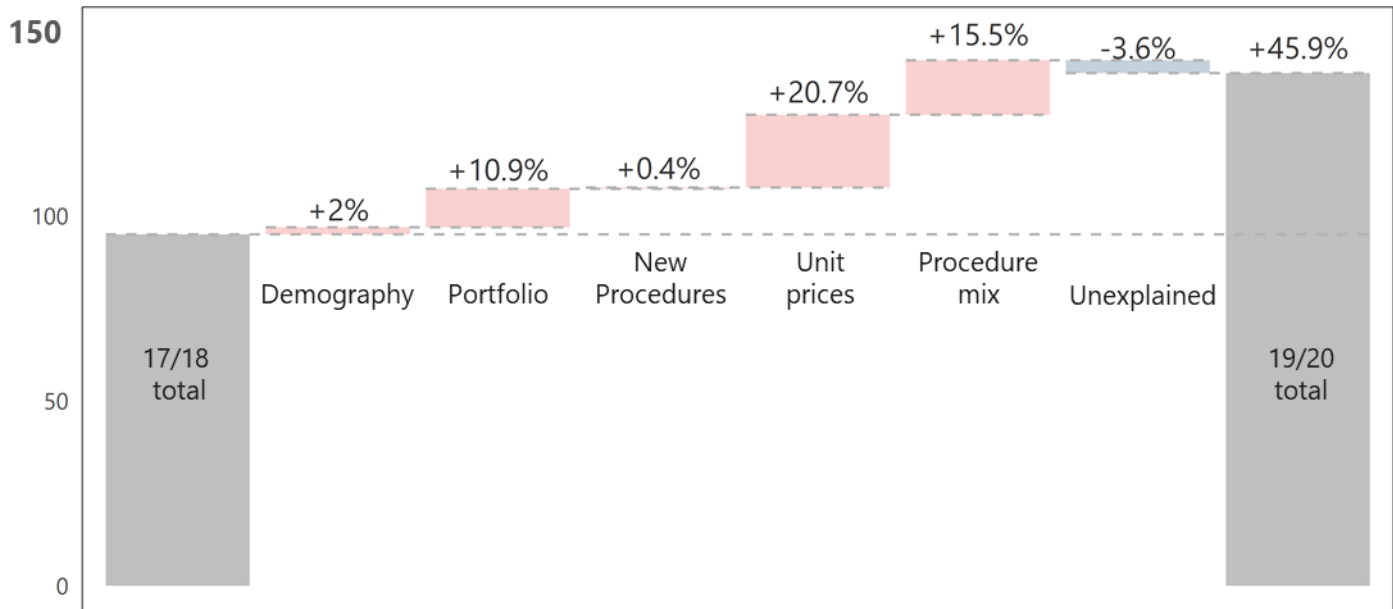


Figure 15: Cost growth analysis for admitted-patient care within the Trauma NPoC.

**Trauma, OP (Fig. 16):** Nominal costs for the sample fell by 4% in two years- though this reduction in costs is true only for our sample (see Fig. 6). The increase in unit prices (in line with adjustments to national prices) has been more than offset by a net reduction in costs due to unexplained factors.

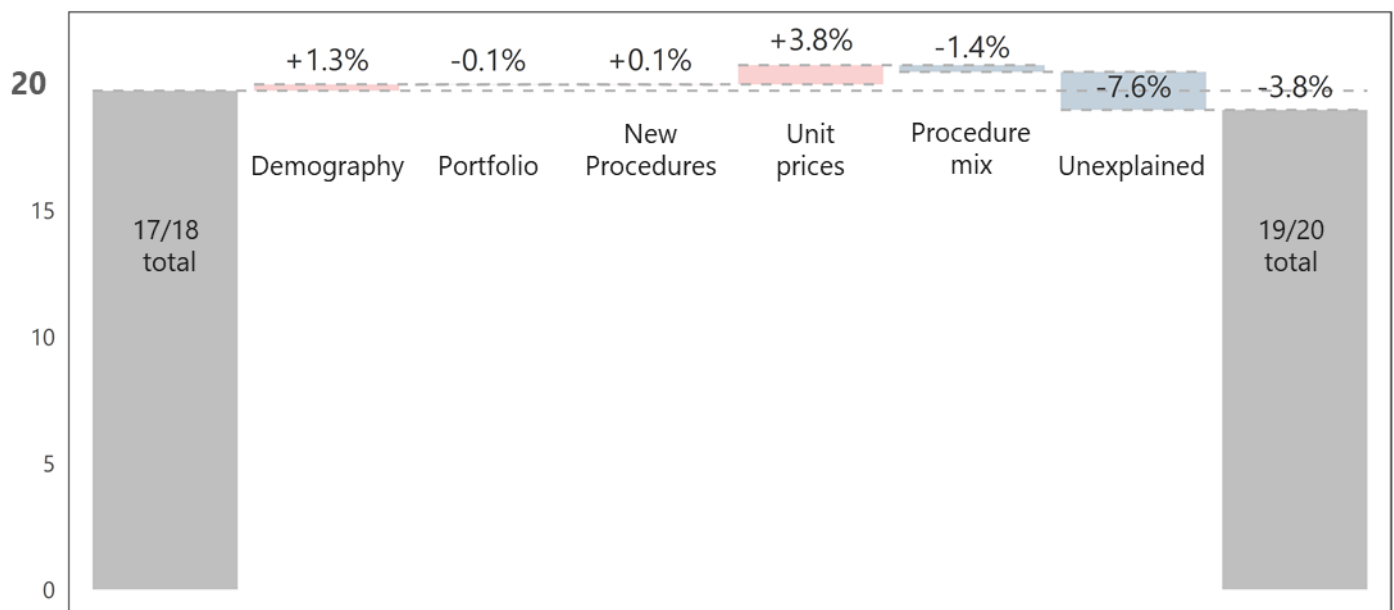


Figure 16. Cost growth analysis for the outpatient care within the Trauma NPoC.

## E: Women & Children

This NPoC covers treatments for women and children, including services for congenital and inherited diseases, and is comprised of the CRGs in Table 4. Our SUS sample examines activity for those under 20 years of age (Fig.17) and does not include critical care episodes.

CRG	Total PLCM Recorded Activity (19/20)	
	APC	OP
Medical Genetics (E01)*	14	25,128
Specialised Surgery in Children (E02)	16,002	194,891
Paediatric Medicine (E03)	19,000	100,463
Paediatric Neurosciences (E04)	4,323	26,378
Congenital Heart Services (E05)	4,355	40,885
Metabolic Disorders (E06)**	311	1,399
Paediatric Intensive Care (E07)*	15,962	-
Neonatal Critical Care (E08)*	120,580	-
Specialised Women's Services (E09)**	286	2,576
Total	180,833	391,720

\* Not included in the analysis. \*\* Only one point of delivery included.

Table 4: Activity in the Women & Children NPoC by point of delivery. Financial year 2019/20.

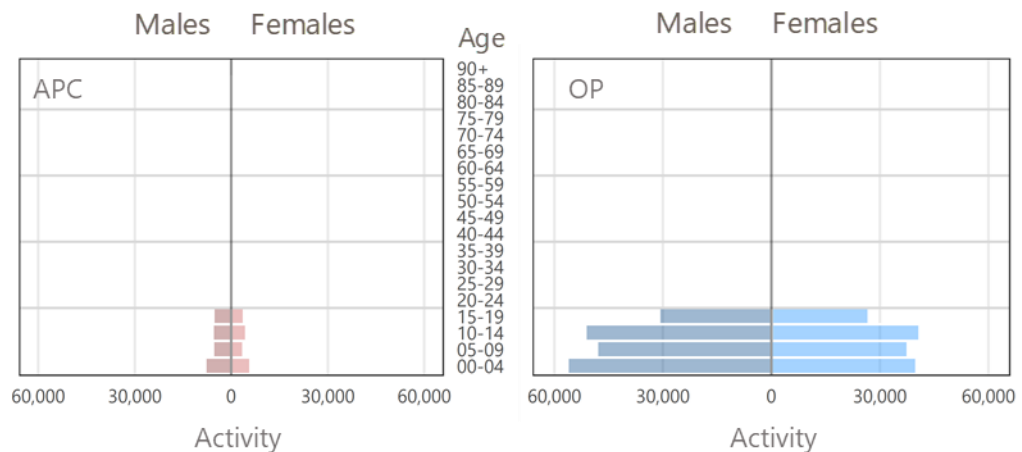


Figure 17: Pyramids show specialised activity for the Women & Children NPoC, by age and gender. Data are from the 19/20 SUS sample and show APC (left) and OP (right),

**Women & Children, APC (Fig 18):** There was a negligible change in nominal costs for the SUS sample over the two years. Changes to the specialised portfolio for this NPoC, as well as the shift to a less resource-intensive procedure mix reduced costs by over 13%. These savings were counterbalanced by a growth in unit prices (in line with the standard increases in national prices, at ~4%), the cost growth associated with new procedures (+1%), and the cost growth due to unexplained factors (+8%).

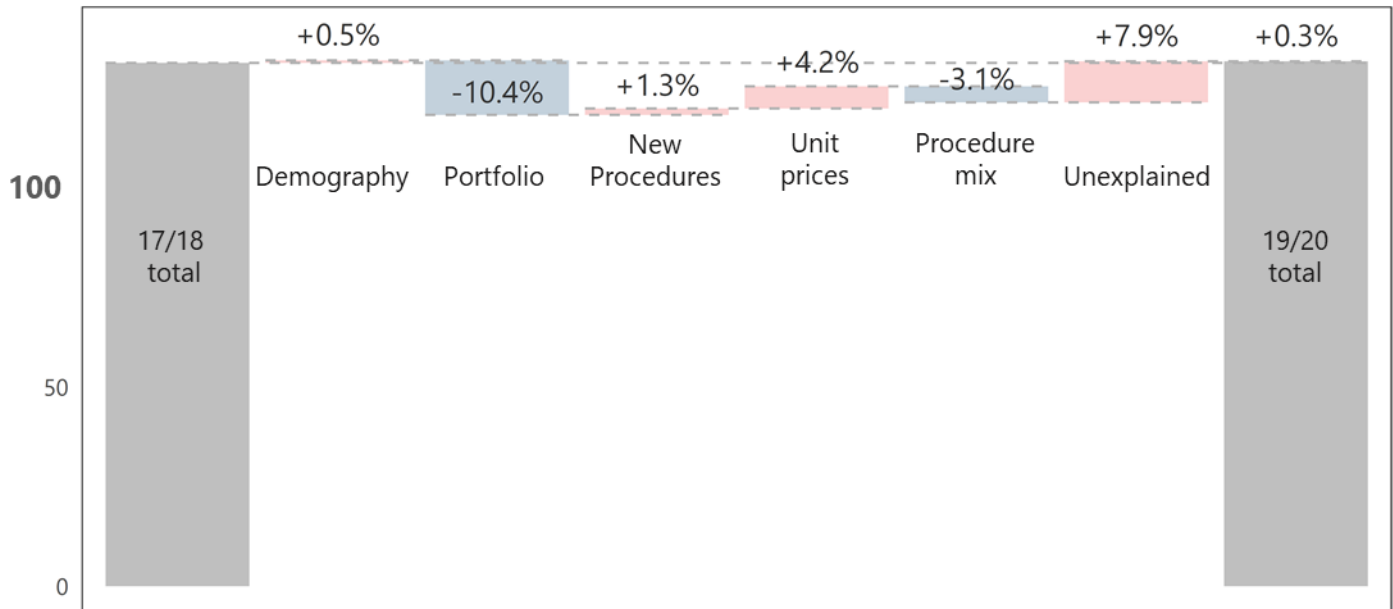


Figure 18: Cost growth analysis for admitted-patient care within the Women & Children NPoC.

**Women & Children, OP (Fig. 19):** Nominal costs for the SUS sample rose by 6% in two years. A rise in unit prices accounts for much of this cost growth (+3.5%), although this increase is broadly in line with adjustments to national prices over the period. The influence of demographic changes (+1% over two years) was counterbalanced by changes to the portfolio in this area (-1%). The net effect of unexplained factors was to add around 3% to costs (see page 8 for candidates).

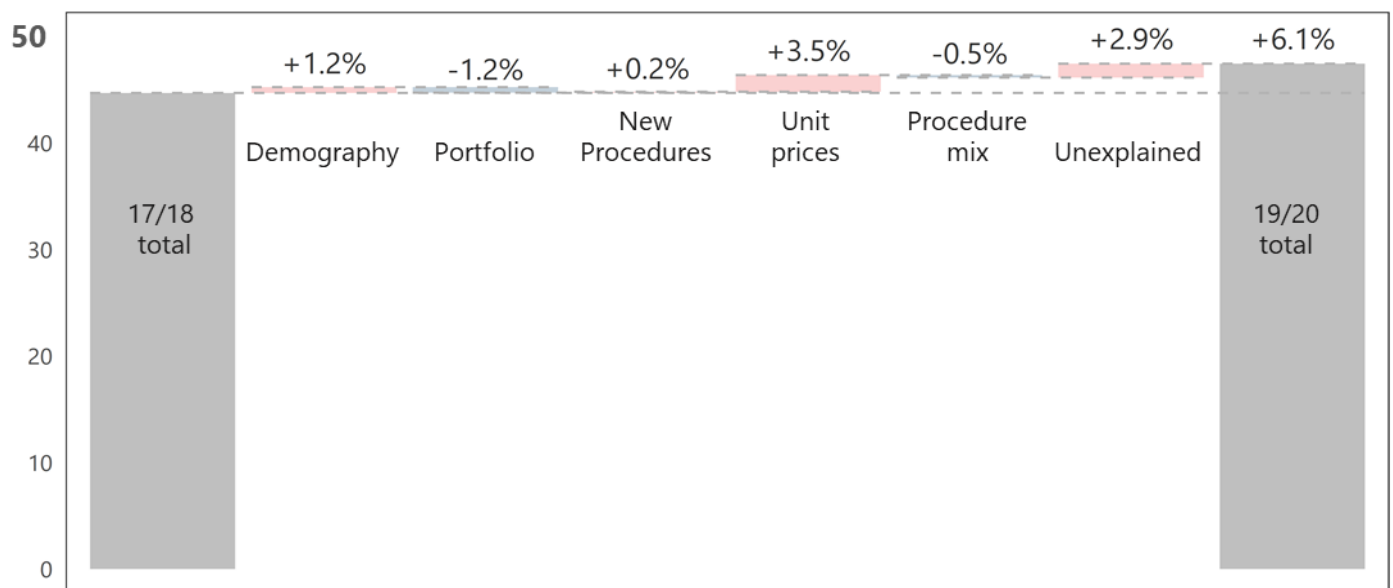


Figure 19: Cost growth analysis for the outpatient care within the Women & Children NPoC.

# Admitted Patient Care Summary

**Specialised APC (Fig. 20):** Nominal costs for the whole APC SUS sample grew by over 15% in two years. Two factors appeared to drive this cost growth. The first was a 10% rise in unit prices (which greatly exceeded the standard ~4% increase in national prices over the period).<sup>24, 25</sup> This overall rise appears to be the result of increases in the tariff for high-cost services, for example neurosurgery in the Trauma NPoC. The second major factor appears to be an overall shift to more resource-intensive activities. This occurred particularly in the Cancer and Trauma NPoCs and increased costs by 8.5%. Factors which had less of an influence over the two years include demography and new procedures, which increased costs by 2% and 1% respectively. The net effect of unexplained factors (those we could not measure directly) moderated cost growth. We believe the dominant influence in this catch-all group may be commissioner attempts to constrain activity growth.

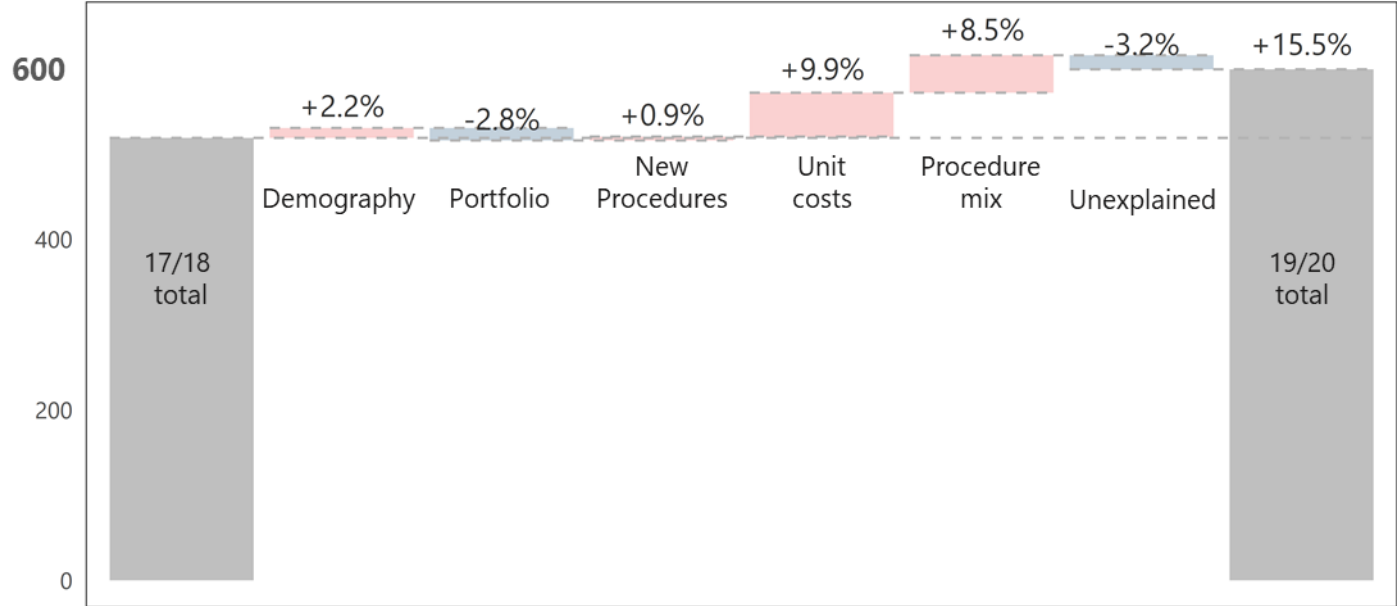


Figure 20. Cost growth analysis for our admitted-patient care SUS sample.

<sup>24</sup> 2017/18 and 2018/19 National Tariff Payment System (2017). NHS England and NHS Improvement.  
<sup>25</sup> 2019/20 National Tariff Payment System (2019). NHS England and NHS Improvement.

# Outpatient Summary

**Specialised OP (Fig. 21):** Specialised outpatient spend is considerably lower than admitted patient spend.<sup>26</sup> Nominal costs for the whole outpatient sample grew by 16% in two years. The dominant factor in this case appears to have been a 13% rise in unit prices (a level much higher than the standard 4% increase in national prices over the period).<sup>27, 28</sup> This rise is almost entirely the result of an increase in the unit price of low-cost cancer follow-up attendances. Price increases for this activity may have been necessary due to a growing reliance on diagnostic and imaging services or greater time being spent with each patient (due to innovation and changing clinical standards). It may also be that this type of activity was under-priced in previous years. Minor influences on cost growth include demographic change (which led to a cost increase of 2%) and a shift to less resource intensive procedures (which reduced costs by 1%). Those factors we could not explicitly measure increased costs by 2%.

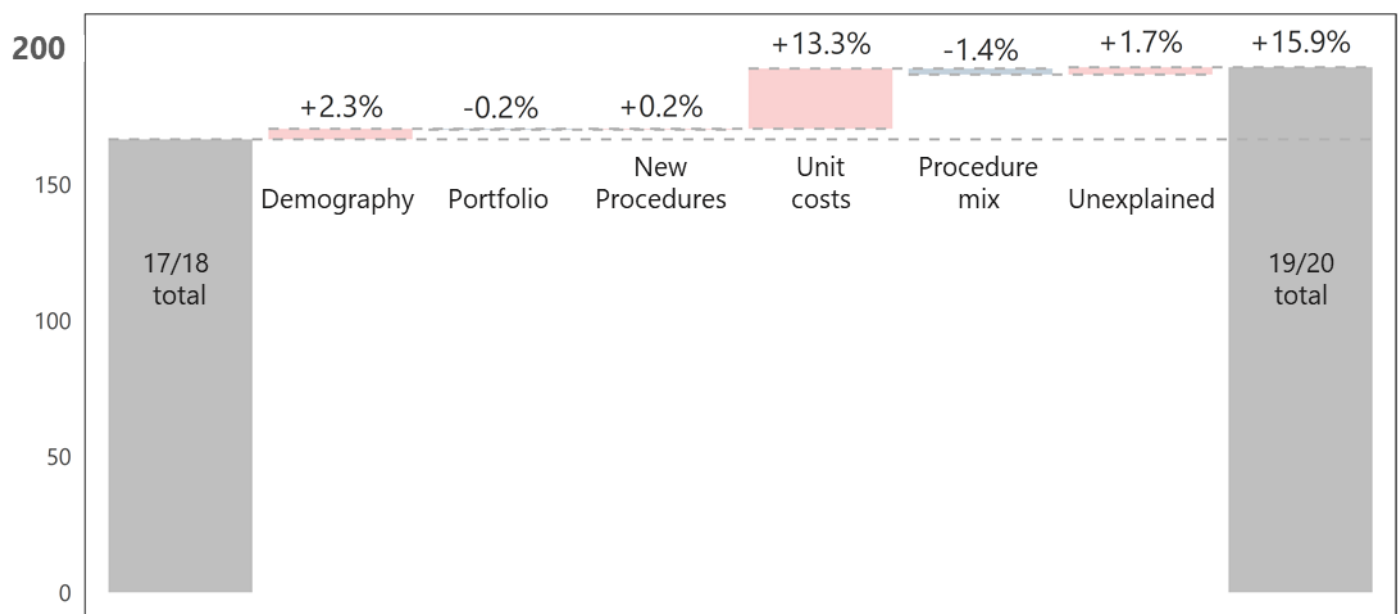


Figure 21. Cost growth analysis for our outpatient SUS sample.

<sup>26</sup> See Fig. 5 and note that high cost drugs are missing from APC cancer.

<sup>27</sup> 2017/18 and 2018/19 National Tariff Payment System (2017). NHS England and NHS Improvement.

<sup>28</sup> 2019/20 National Tariff Payment System (2019). NHS England and NHS Improvement.

## 4. Discussion

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There have been longstanding concerns about the cost growth of specialised services and whether they deliver value for money. In this report, we have estimated the influence of various factors driving the cost growth of these services. Such analysis may help the NHS understand whether the allocation of funds to (and within) specialised services is appropriate.

### **Key contributors to cost growth**

In recent times, the budget for specialised services has risen by an average of 8% per year. Within our SUS sample, the biggest driver of this cost growth appears to be a rise in the unit prices paid to the provider.

Most unit prices are dictated by the National Tariff Payment System<sup>29</sup> and should broadly reflect the costs incurred by providers. The standard national prices (tariffs) for all activities are periodically reviewed and adjusted to account for inflationary pressures, as well as desired efficiency goals. However, it appears that several adjustments to national prices (and top up payments for specialised care) over the period have had a telling effect on cost growth. Examples of these changes include:

- increases in the tariff for low-volume, high-cost neurosurgery;<sup>30</sup> and
- increases in the tariff for high-volume, low-cost cancer-related outpatient attendances.<sup>31</sup>

There were also considerable increases in locally agreed prices for some outpatient cancer attendances.

Of course, it may be that all these adjustments addressed previously under-priced activities, in which case we would not anticipate unit prices to contribute heavily to cost growth in the coming years. However, if such

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<sup>29</sup> 2019/20 National Tariff Payment System (2019). NHS England and NHS Improvement.

<sup>30</sup> For example, the price of a non-elective spell with HRG AA50A (Very Complex Intracranial Procedures) rose from £22,094 in 2017/18 to £27,941 in 2019/20. Specialised services top up rates for Neurosciences (NCBPS08S) have also increased. Sources: Annex A of the *National Tariff Workbooks* 2017/18 and 2019/20. NHS England and NHS Improvement.

<sup>31</sup> The price of a consultant-led follow-up outpatient attendance in Clinical Oncology rose from £97 in 2017/18 to £126 in 2019/20. For Medical Oncology, the price rose from £118 to £126 in the same period. Specialised services top up rates for cancer have also increased. Source: As above.



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changes in the tariff are routine, we might expect unit prices to continue to drive the cost growth of specialised services.

A second key factor driving cost growth has been the change in the procedure mix. That is, given the presenting case-mix, service responses have been increasingly resource intensive and costly. It is worth noting that the adoption of new procedures account for only a small part of the growth in this area.

Finally, we have the modest - but sustained - contribution of demographic change, which increases specialised service costs by around 1% each year. This level of influence is comparable to the demographic effect found in other types of health service provision.<sup>32</sup>

The cost growth factors, above, appear to have been weakly moderated by a contraction of the specialised portfolio and by influences we could not explicitly measure (including, we believe, commissioner attempts to control activity growth). On a related note, portfolio contraction is unlikely to result in significant cost savings for the NHS as a whole: Activity dropped from the specialised portfolio will be picked-up by local commissioning groups.

### **Differences between NPoCs**

While there are broad themes in the cost growth of specialised services overall, there is substantial variation in the results by programme of care and point of delivery.

- Demographic influences have had a bigger effect in Internal Medicine than for other NPoCs (increasing costs by 1.5% per year).
- For APC cancer services, there has been a notable change in the procedure mix. Put another way, cancer services' response to presenting patients has been increasingly resource intensive. Moreover, the cost impact of new procedures has also been larger than elsewhere (yet remaining relatively modest, increasing costs by 1% per year).

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<sup>32</sup> *The bigger picture: learning from two decades of changing NHS care in England* (2020). The Real Centre at the Health Foundation

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- For APC within the Trauma NPoC, substantial growth in the portfolio, a rise in unit costs, and an increase in average procedure complexity has resulted in a large overall cost growth.
  - Within the Women & Children NPoC the procedure mix has been simplified for both APC and OP services. While this is the only APC programme for which the procedure mix has reduced in complexity, we note that the exclusion of critical care services may have affected this result. This is further discussed in the Limitations sub-section, below.
  - Outpatient cost growth, meanwhile, seems to have been almost entirely driven by a rise in the unit costs of cancer-related attendances.

### **Limitations of this analysis**

Due to the narrow coverage of the data sources, this analysis was based on a subset of specialised services spend. While the cost growth estimate from the complete SUS sample (7.8%)<sup>33</sup> is in line with the national trend (7.8%),<sup>34</sup> our results may not generalise to the wider specialised commissioning portfolio.

A first point to make is that activity recorded in the PLCM table makes up only 40% of the specialised commissioning budget (Fig. 22 overleaf). A key element missing from our analysis of the four NPoCs is the influence of high-cost drugs within these programmes. High-cost drugs account for an additional 20% of the specialised budget.<sup>35</sup> Moreover, cost growth in this area is estimated to be around 9% per year,<sup>36</sup> which is likely to be a consequence of the NHS authorising funding for new drugs. As a result of these considerations, we would expect our estimates for all NPoCs - and especially Cancer<sup>37</sup> - to be affected by this omission.

The remaining 40% specialised services budget - which goes towards mental health services, high-cost devices, block contracts, as well as dialysis and other services - is less likely to impact our estimates for the selected four NPoCs.

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<sup>33</sup> See Figure 1 on page 2.

<sup>34</sup> See Figure 2 on page 6.

<sup>35</sup> Derived from: The commissioning of specialised services in the NHS (2016). National Audit Office.

<sup>36</sup> 2017/18 and 2018/19 National Tariff Payment System (2017). NHS England and NHS Improvement.

<sup>37</sup> A large part of the spending on high-cost drugs goes to chemotherapy treatments (Cancer NPoC).

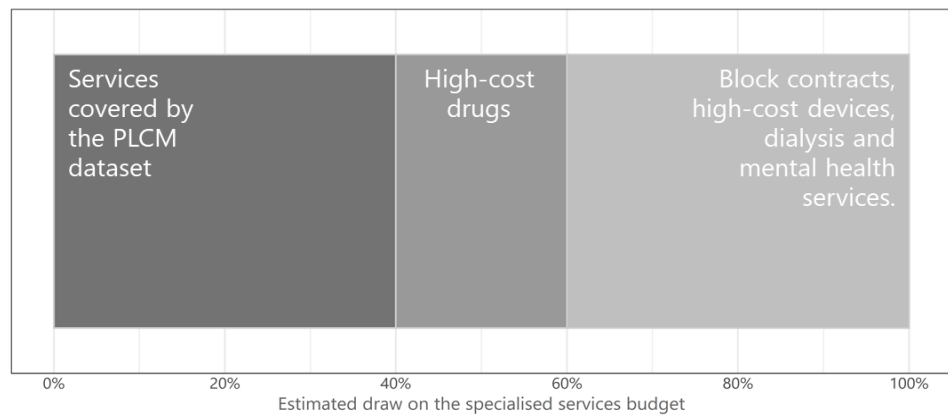


Figure 22: Estimated utilisation of the specialised service budget, by area of spend.

The second key point is that our analysis is based on a SUS-matched subset of the PLCM table where data were sufficiently robust (Fig. 5 and Fig. 6). This subset - the complete SUS sample (APC and OP) - captured 62% of specialised service costs recorded by the PLCM table in the chosen years, which equates to 25% of the estimated regional specialised services spend. Some activity found in the PLCM table was absent from the SUS records and could not be matched. In other cases, we were obliged to exclude specific classes of activity from the SUS sample due to inconsistencies when comparing to the PLCM data. Critical care activity was perhaps the most important of the classes to be excluded: Spending on critical care accounted for 7% of the specialised service costs recorded in the PLCM in the two chosen years.<sup>38</sup> The exclusion of critical care activity will likely impact our estimates for APC Trauma and APC Women & Children.

The limitations named above – and, indeed, many of the challenges faced when conducting the analysis – were due to the past inadequacies of the data sources. However, providers are now required to report their specialised activity in the Contract Monitoring standards,<sup>39</sup> and there are signs this will greatly improve the quality and consistency of information. Meanwhile, the messages we have drawn out are relevant despite the constraints of the data, and we would hope that our findings encourage continued improvements in specialised commissioning.

<sup>38</sup> About 3% of estimated total specialised services spend.

<sup>39</sup> <https://www.england.nhs.uk/nhs-standard-contract/dc-reporting/>

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