National Audit Office

Report
by the Comptroller
and Auditor General

Department of Health & Social Care

Investigation into the rescue of Carillion's PFI hospital contracts

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National Audit Office

Department of Health & Social Care

Investigation into the rescue of Carillion's PFI hospital contracts

Report by the Comptroller and Auditor General

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Gareth Davies
Comptroller and Auditor General
National Audit Office

14 January 2020

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In January 2018 the construction company Carillion went into liquidation, leaving two new hospitals – the Midland Metropolitan Hospital and the Royal Liverpool University Hospital – unfinished. These projects, being built under the Private Finance Initiative, were already running late, but the collapse of Carillion has caused further delays. The projects will now be completed with public finance.

Investigations

We conduct investigations to establish the underlying facts in circumstances where concerns have been raised with us, or in response to intelligence that we have gathered through our wider work.

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Contents

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Key facts

	Midland Metropolitan	Royal Liverpool
The project	669-bed hospital in Sandwell, West Midlands, replacing two existing hospitals	646-bed hospital in central Liverpool to replace the existing hospital
Expected benefits	Modernised services in a single site acute hospital	Reduced risk to services from current hospital's poor condition, meeting changing healthcare demands
NHS Trust	Sandwell and West Birmingham Hospitals	Royal Liverpool and Broadgreen University Hospitals
Original opening date	October 2018	June 2017
Status when Carillion collapsed in January 2018	Around two-thirds complete, structure largely built	Construction and fit-out almost complete
PFI termination	No payment to lenders	£42 million payment to PFI lenders
Procurement of contractor to replace Carillion	Bidding process under public procurement rules, only one bidder	No public procurement process. Main contractor appointed by the PFI company, transferred ('novated') to the Trust
Delay until major work recommenced	22 months	18 months
New contractor	Balfour Beatty Construction Limited	Laing O'Rourke
Current forecast opening dates	July 2022, 3 years and 9 months late	Completion planned for autumn 2022, more than 5 years late. Opening date not yet set
Key risks remaining to the Trusts	Balfour Beatty has agreed a target price for finishing the hospital, but the Trust will pay for any unforeseen costs arising from problems with Carillion's work	There is no cap to the price of the remaining work, the scope of which is being finalised, and there are risks of further cost rises and time delays
Original expected cost to build and run	£686 million	£746 million
Current expected cost to build and run	£988 million (+44%)	£1,063 million (+42%)
Of which, amount public sector will pay	£709 million (+3%)	£739 million (-1%)
Estimated losses on the projects borne by private sector	£279 million	£324 million

What this investigation is about

1 This report is about what happened to Carillion's two major public sector construction contracts after it collapsed and how the Private Finance Initiative (PFI) operates in these circumstances. Carillion plc went into liquidation on 15 January 2018. In June 2018 we reported how government worked to ensure continuity of the public services operated by Carillion during the liquidation. But Carillion's construction contracts stopped. At the time, Carillion was the main construction contractor for two new hospitals, both being built under PFI:

- the Midland Metropolitan Hospital in Sandwell, West Midlands (Midland Metropolitan). This is to be used by the Sandwell and West Birmingham Hospitals NHS Trust (referred to in this report as 'the Sandwell Trust' or 'the Trust' as appropriate); and
- the Royal Liverpool University Hospital (Royal Liverpool). This is to be used by the Liverpool University Hospitals NHS Foundation Trust, which was formed on 1 October 2019 through a merger between the Royal Liverpool and Broadgreen University Hospitals NHS Trust (referred to as 'the Liverpool Trust' or 'the Trust' as appropriate) and another NHS trust.

2 Under the original PFI arrangements, dedicated private companies – The Hospital Company (Sandwell) Ltd and The Hospital Company (Liverpool) Ltd (both referred to in this report as 'the PFI company') – were responsible for the delivery of each hospital and held the finance. These companies were to be financed by £57 million from shareholders (including Carillion), £395 million loans from investors (mainly banks) and £215 million of government funding. The PFI companies had contracts with Carillion to deliver the hospitals to an agreed price.

3 The principle behind PFI is that the PFI companies are responsible for the provision of the asset over a period of around 30 years. The PFI companies, and hence the PFI investors, are only paid for the hospital if it is built and available for use. This works by spreading the Trust's payments for the cost of building and maintaining the hospital over the period of the contract, through a monthly 'unitary charge'. The Trust receives ownership of the hospital after the contract has ended.

4 The projects were at different stages of construction when Carillion stopped work. The Royal Liverpool was nearing completion and the Midland Metropolitan was about two-thirds complete. But both hospitals were already behind schedule and Carillion's costs were rising. PFI companies are designed with little spare contingency funding as they pass the risks to their contractors. They are reliant on the financial strength of the contractor to deliver the buildings to the agreed price. But in this case this was not viable because of Carillion's collapse. By autumn 2018 it was clear that both PFI companies could not replace Carillion with another contractor using the remaining money left in the projects.

5 HM Treasury, the Cabinet Office, the Department of Health & Social Care, and NHS Improvement (the Departments) collectively agreed to replace the two PFI schemes with public financing. Work then restarted at Royal Liverpool, with a new main contractor addressing problems with Carillion's work. At Midland Metropolitan, the contract to complete the work was awarded to Balfour Beatty in December 2019.

6 This investigation is thus a case study on what happens to a PFI construction project when it goes wrong. The PFI companies were expected to replace the construction contractor and carry on. But they could only do that until the point at which the cost to complete grew larger than the funds available to the project. On the one hand fixed-price contracts, like PFIs, can ensure that contractors are both incentivised to manage costs and bear the brunt of cost rises. On the other hand, some risk ultimately remains with the public sector; when things go wrong beyond a certain tipping point, the public sector will bear the consequences. For these projects the tipping point was reached through a combination of high cost overruns on the construction and the failure of the contractor who had been expected to pay for them.

7 The investigation focuses on the role of central government and the Trusts in relation to the two hospital projects before, during and after Carillion's failure in January 2018. It sets out:

- the construction problems on each project (Part One);
- how the government and the Trusts dealt with the effects of the collapse of Carillion (Part Two); and
- the impact on the schedules and costs of the two projects (Part Three).

8 To prepare this report we have relied on information from the Departments and the Trusts. This is because many of the private organisations previously involved, including Carillion and the PFI companies, are in liquidation or have had their contracts terminated. We have not assessed the actions of Carillion, its directors or its advisers.

9 The Department of Health & Social Care and the Cabinet Office agree with the facts and findings of this report, but have asked us to note that our approach to presenting the costs of the two hospital projects is not the one that they would have chosen. We have expressed costs in real terms, to make them easier to understand, and therefore have not included the time value of money.

Summary

Where are the hospital projects now?

10 **The hospitals are currently due for completion several years late, meaning local patients have to use the existing facilities.** Under current plans by the Sandwell and West Birmingham Hospitals NHS Trust (the Sandwell Trust) and the Liverpool University Hospitals NHS Foundation Trust (the Liverpool Trust):

- The Midland Metropolitan Hospital (Midland Metropolitan) is now expected to open in July 2022. This would be a delay of three years and nine months from the original planned opening date, October 2018 (paragraph 3.2).
- The Royal Liverpool University Hospital (Royal Liverpool) is now expected to be completed in autumn 2022. The Trust has not yet set an opening date, but this will be more than five years after the originally planned opening of June 2017. Further work to demolish the old hospital and create a new underground car park and public plaza, was not included in the PFI project and is currently unfunded (paragraphs 2.40 and 3.5).

11 **The currently expected total cost to all parties of building the two hospitals has risen 98% since the Private Finance Initiative (PFI) contracts were signed.** The construction of the Midland Metropolitan is now expected to cost at least £663 million compared with £350 million in the original business case. This includes £315 million still to be spent to complete the construction, including the Trust's contract with Balfour Beatty and other costs. The construction of the Royal Liverpool is now expected to cost at least £724 million compared with £350 million in the original business case. This includes a currently estimated £293 million for remedial work to the structure and to complete the construction. The cost of maintaining both hospitals has also risen due to changes in the market since the PFI contracts were signed, and the delays have also led to cost increases on other projects (paragraphs 3.9 to 3.13 and Figures 7 and 10).

12 The use of PFI means that the private sector will end up paying most of the cost increase, and the public sector is only expected to pay 1% more in real terms across both projects than was originally expected. Collectively the investors, their insurers and Carillion have lost at least an estimated £603 million across both hospital projects. Once the increased cost of maintenance and the impact of the delay on other projects are taken into account, the currently expected total cost to the public sector of the Midland Metropolitan hospital has risen by 3% and the currently expected total cost to the public sector of the Royal Liverpool has fallen by 1%. The public sector's costs are higher than they otherwise would be because the public sector contribution to the projects was higher than was usual for PFI, in order to reduce the amount of private finance necessary and make the projects more affordable (paragraph 3.14 to 3.18 and Figures 7 and 10).

13 The Trusts now face higher early costs, but will receive additional support from the Departments, so will pay an estimated net £155 million less than planned under the PFIs. The costs above do not take account of when the money will be paid. The new arrangements require the Trusts to pay the construction costs sooner, over the course of the rest of the construction, instead of spreading the costs of the construction over the 30-year operational period of the PFI contracts. However, they have received additional support from NHS England and NHS Improvement (NHSE&I)[1] and the Department of Health & Social Care, including additional public dividend capital which acts as a permanent loan, which compensates for having to pay more upfront (paragraphs 3.19 and 3.20 and Figures 9 and 12).

14 Both Trusts will pay for any further costs arising from problems with Carillion's work and there are particularly significant risks of further cost increases and delays at Royal Liverpool. Both Trusts are now directly managing the contracts with new construction firms:

- Balfour Beatty has agreed a 'target price' for its work to complete the Midland Metropolitan, but the Trust may have to pay more for extra work caused by defects in Carillion's work that could not have been foreseen during Balfour Beatty's pre-contract due diligence.
- Laing O'Rourke is acting as a managing contractor and is paid a fee to manage other contractors to complete the Royal Liverpool. Laing O'Rourke has no contractual incentives to manage cost. Some issues which are not yet resolved could increase costs.

NHSE&I has worked with the Trusts to put additional oversight arrangements in place on costs and the Trusts are using an independent construction consultancy to advise on the appropriateness of costs. Both Trusts have also sought warranties from Carillion's subcontractors for work already done (paragraphs 2.29 to 2.40).

1 NHS England and NHS Improvement, previously two organisations, merged from 1 April 2019.

What went wrong with the construction of the hospitals?

15 Both hospital projects had significant difficulties before Carillion's collapse and their openings had already been delayed. Both projects were running around a year late by January 2018:

- At Midland Metropolitan, construction was originally expected to be complete by July 2018. By late 2017, the structure was complete but delays to the designs for the mechanical and electrical fit-out had delayed the completion date by 11 months to June 2019 (paragraphs 1.12 to 1.15).
- The Royal Liverpool's construction had been delayed due to problems including asbestos discovered on the site and issues with the power supply. During 2017 Carillion was investigating the cause of some cracks in structural beams, while work continued. By late 2017 the hospital was at a late stage of construction and Carillion expected to complete it in April 2018, some 13 months late (paragraphs 1.16 and 1.17).

16 Carillion stopped work on both sites when it collapsed on 15 January 2018, which created more delay on both projects. The Cabinet Office provided funding to the Official Receiver to enable the Trusts and the PFI companies to secure the sites, retain key staff and maintain essential services such as ensuring water pipes were used to avoid bacteria building up (paragraph 2.2).

17 The PFI company and the Trust discovered further construction issues at Royal Liverpool following Carillion's collapse. Initially, the Trust and the PFI company thought only modest remedial work was necessary, but in April 2018 the PFI company commissioned the engineering consultants Arup to review the structural design and perform a fire safety review. Arup reported that major work was needed to strengthen the structure at multiple points, which required the new fittings, piping, wiring and heavy plant and equipment to be stripped out across three floors of the building. Further work identified other construction problems, including shortcomings in internal fire protection and the fire safety of external cladding (paragraphs 1.17 to 1.20).

18 It is not clear why the design problems at both hospitals occurred. PFI arrangements are meant to lead to better design and performance by transferring the risk to the most appropriate party. The Trusts require the PFI companies to build the hospitals to the required specification. The PFI companies and their investors are meant to be able to rely on their contractors to manage the design of the projects. The investors' payments to the PFI companies are made in line with technical adviser reports that track progress against plan and provide no assurance over the design. We have not looked at the detail of what went wrong with the design process within Carillion and its subcontractors. NHS England and NHS Improvement and a few individuals involved in the construction projects told us that one of the causes may have been that Carillion's original pricing was too low to meet the required specification (paragraphs 1.5 and 1.21).

How did the Trusts and Departments deal with Carillion's failure?

19 **The Departments and the Trusts assumed that the PFI companies would complete the hospitals, as contractually required, by replacing Carillion.** As we reported in June 2018, government had contingency plans for the collapse of Carillion, but focused on operational service contracts to ensure that services to the public continued, and not Carillion's construction projects. The PFI companies' plans assumed work would pause while they found a new construction company (paragraphs 1.8 to 1.10).

20 **Following Carillion's collapse, the PFI companies assessed the status of the projects and found that they did not have enough money to complete them.** In line with the usual PFI model, both PFI companies would have been relying on Carillion to absorb the rising cost of completing the hospitals and had been designed with very little contingency funding of their own. They thus found that with Carillion no longer guaranteeing to deliver the hospitals at the set price, and large costs to correct and complete the hospitals, that they had insufficient funding from investors to complete the projects. At Midland Metropolitan, the PFI company notified the Sandwell Trust in January 2018 that it could not complete the hospital without additional money from the Trust. At Royal Liverpool, which the Liverpool Trust believed was within a few months of completion, the project seemed deliverable with the money available from the investors until July 2018, when the extent of the problems with the structure, internal fire protection and cladding emerged (paragraphs 2.3 to 2.6).

21 **The Departments wanted to hold the private sector to its contractual liabilities and avoid any 'bailout' that would set a precedent.** The Department of Health & Social Care, the Cabinet Office and HM Treasury were concerned that additional public funding would not be value for money and would set a precedent for similar bailouts of other PFI contracts, by breaking the principle that PFI investors bear the risk of their projects. It also feared that a bailout could lead to not only the two hospitals but all the government's PFI debts being reclassified as National Debt. In May 2018 the Departments rejected the Sandwell Trust's proposal to rescue the Midland Metropolitan PFI company through additional government funding, although the Trust believed this could have led to the completion of the hospital 18 months earlier than under public financing. In September 2018 the Departments also rejected a similar rescue package proposed by the PFI investors for Royal Liverpool (paragraphs 2.7 to 2.12, 2.18 and 2.19).

22 **The Departments explored whether new PFI schemes could be set up but found no interest from potential investors or construction contractors.** The Department of Health & Social Care worked with NHS Improvement, the Infrastructure and Projects Authority in the Cabinet Office, and HM Treasury in a 'recovery group' to coordinate work to restart the hospital projects. The group contacted potential private investors in a new PFI scheme for Midland Metropolitan, while the Sandwell Trust researched whether construction contractors would be interested. They found that potential investors and contractors would not accept any financial risk of a problem later arising due to Carillion's work, which made a PFI scheme or any normal fixed-price contract impractical (paragraphs 2.11 and 2.13 to 2.15).

23 **The Departments were left with terminating the PFI schemes and using public finance to complete the hospitals with new contractors.** The Sandwell Trust terminated the Midland PFI company's contract in July 2018 and, following discussions about the extent of the structural problems at Liverpool, the Liverpool Trust terminated its PFI company's contract in October 2018. This avoided any 'bail out' of the PFI companies or reclassification of other PFI debt. The Departments agreed to provide additional public funds to the Trusts to finish the hospitals instead. HM Treasury approved the new business case for Midland Metropolitan in October 2019 (paragraphs 2.12, 2.22 and 2.29).

24 **The Department of Health & Social Care funded the Trust to pay £42 million compensation to Royal Liverpool's lenders to terminate the contract**. PFI contracts are not well designed for a termination during the construction stage. The contract required the Trust to pay compensation to the PFI company's lenders, based largely on the estimated cost to complete the hospital, before the actual cost to complete the hospital was properly known. It also allowed the lenders the option to delay construction for several months while compensation was negotiated. The Departments decided to reach a quick consensual settlement with the lenders for the compensation payment, so that the Trust could take over the site quickly and continue the work of the PFI company's construction contractors. This avoided the lengthy contractual termination process that may have led to a lower compensation payment but would have led to more delay and its associated cost. But going for a quick settlement meant the Departments had to rely on the available estimate of the cost to complete, provided by the PFI company, its lenders and their advisers (paragraphs 2.20 to 2.27).

25 **Had the Departments better understood the cost to complete the Royal Liverpool, they may not have funded the Trust to pay any termination payment to the lenders.** At the time of the settlement in September 2018, the Departments used an estimate of the cost of completing Royal Liverpool of £117 million present value based on information provided by the lenders and their advisers, but this was subject to a lot of uncertainty. By January 2019 further work on site led the Trust to increase this estimate by £47 million to £164 million, which was sufficiently high to mean no termination payment would have been due under the contract. The current estimate of the cost to completion is £293 million (paragraphs 2.25 and 2.26).

26 **To restart the projects, the Liverpool Trust agreed contracts with several new suppliers without a public procurement process, while the Sandwell Trust ran a public procurement which only attracted one viable bidder.** This meant that new suppliers for both the hospitals were chosen without competition. The Liverpool Trust transferred contracts from the PFI company without going through a procurement exercise and has then appointed further work to smaller contractors without competition to prevent further delay to the project and to maintain warranties. The Trust told us that it estimated the costs of delay at more than £2 million per month. Its board was advised that some of the contracts could be subject to legal challenge because they were not properly procured or advertised, but given there was no market for the work that the likelihood of this was low. The Sandwell Trust signed a construction contract with Balfour Beatty in December 2019. Balfour Beatty was the only viable bidder and had started work on site under an 'early works' contract while the Sandwell Trust was putting together a business case for completing the hospital and running a public sector procurement for a new contractor (paragraphs 2.29 to 2.40).

Part One

The Carillion hospital projects

1.1 In this Part we explain how the two Carillion hospital projects were set up and the issues that they had up to 2018 when Carillion collapsed. We set out:

- Carillion and its collapse;
- the hospital projects;
- the use of the Private Finance Initiative (PFI) and its successor PF2;
- contingency planning for the failure of Carillion; and
- progress before Carillion's collapse.

Carillion and its collapse

1.2 Carillion plc was a British multinational company that supplied facilities management and construction services to many public sector organisations across the UK. It announced a profits warning on 10 July 2017 and went into liquidation in January 2018. We reported on the government's handling of Carillion's collapse in June 2018.[2]

The hospital projects

1.3 The two hospital projects are summarised in **Figure 1** overleaf. Both hospitals are intended to improve NHS services for people in their surrounding areas, by providing modern facilities to replace ageing existing hospitals and enabling local health services to be redesigned in line with changing needs.

2 Comptroller and Auditor General, *Investigation into the government's handling of the collapse of Carillion*, Session 2017–2019, HC 1002, National Audit Office, 7 June 2018.

Figure 1
The two hospital projects

	Midland Metropolitan Hospital	Royal Liverpool University Hospital
The project	669-bed hospital in Sandwell, West Midlands, replacing two existing hospitals.	646-bed hospital in central Liverpool replacing the existing hospital.
Expected benefits	Modernised services in a single site acute hospital.	Reduced risk to services from current hospital's poor condition, meeting changing healthcare demands.
NHS Trust	Sandwell and West Birmingham Hospitals NHS Trust ('the Sandwell Trust' or 'the Trust' in this report)	Royal Liverpool and Broadgreen University Hospitals NHS Trust ('the Liverpool Trust' or 'the Trust' in this report).

Notes
1 Work to demolish the existing Royal Liverpool hospital and develop an underground car-park and public plaza in its place was not included in phase 1 of the Private Finance Initiative (PFI) project and is subject to future business cases.
2 On 1 October 2019, while this report was being prepared, the Royal Liverpool and Broadgreen University Hospitals NHS Trust merged with another NHS trust to form the Liverpool University Hospitals NHS Foundation Trust.

Source: National Audit Office

The use of PFI and PF2

1.4 Under PFI schemes, private investors finance public sector capital projects in exchange for a financial return from the taxpayer once the project is delivered. The government has used PFI and its successor PF2 to build assets since the 1990s, while continuing direct public financing of many other projects. The Royal Liverpool project was a PFI while Midland Metropolitan was set up as a PF2, the main difference being that the government took a minority equity stake in the latter, managed by the Infrastructure and Projects Authority (IPA) in the Cabinet Office. In 2018 we reported that there were more than 700 operational PFI deals, with the Department of Health & Social Care (the Department) using PFI for 127 projects.[3] In this report we use 'PFI' to refer to both PFI and PF2 schemes.

3 Comptroller and Auditor General, *PFI and PF2*, Session 2017–2019, HC 718, National Audit Office, 12 January 2018.

1.5 Departments were able to use PFI until 2018 when government policy changed. PFI involves the use of private finance, which costs more than normal government borrowing. But HM Treasury believed that this cost could be outweighed by the other benefits of allocating risk to the most appropriate party through the use of PFI, including greater certainty over construction costs, better governance and due diligence over the project, improved operational efficiency and higher-quality, well-maintained assets. In 2009 we reported that PFI construction projects were being delivered to timetable in more than two thirds of cases and to price in around half.[4] However, the use of PFI has been controversial. The House of Commons Public Administration and Constitutional Affairs Committee reported in July 2018 that its advantages remained unproved.[5] The Chancellor of the Exchequer announced in October 2018 that the government would abolish the use of PFI and PF2 for future projects.

1.6 Carillion was chosen to build Royal Liverpool by the Royal Liverpool University Hospitals NHS Trust (the Liverpool Trust), and to build Midland Metropolitan by the Sandwell and West Birmingham Hospitals NHS Trust (the Sandwell Trust), following open competitions. It had a dual role in the two hospital PFI schemes, as the lead construction contractor and as a major shareholder in the private companies responsible for the projects. **Figures 2a** and **Figure 2b** on pages 16 and 17 show the structures of the two PFI schemes including the PFI companies (or Special Purpose Vehicles), which raised finance from debt and equity investors to pay for each hospital's construction. The investors' returns were expected to come from monthly 'unitary charges', which the Trusts would start to pay once the hospitals opened.

1.7 The Trusts had contracts with the PFI companies to deliver the hospitals. The Trusts' management boards received regular updates on progress and approved key decisions. Several central government bodies (the Departments) were also involved in oversight of the two projects:

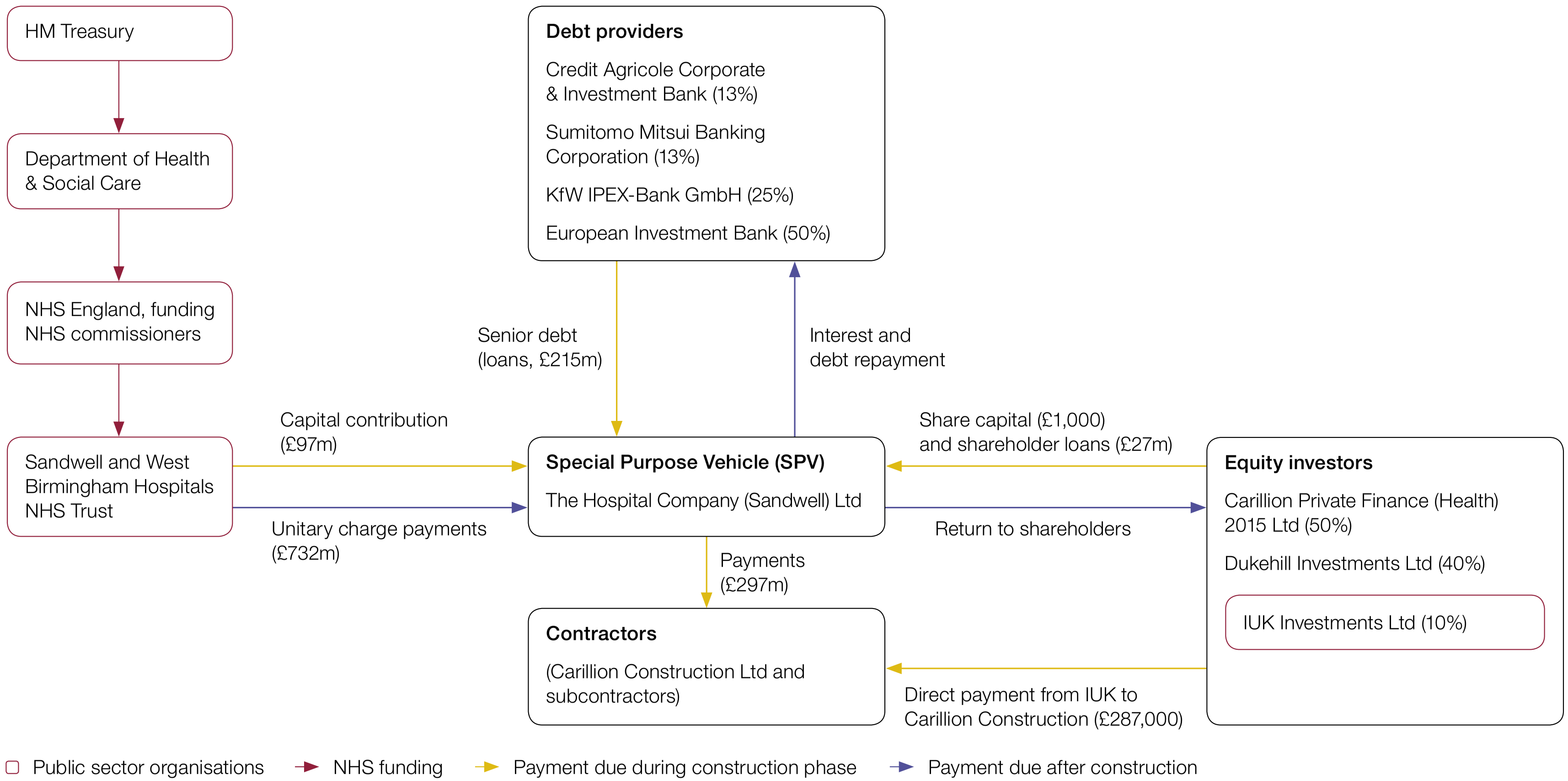
- the original business cases for the projects were approved by the then Department of Health and HM Treasury;[6]
- under the PF2 model used for Midland Metropolitan, two civil servants from the Cabinet Office's Infrastructure and Projects Authority (IPA) were directors of the PFI company (The Hospital Company (Sandwell) Ltd); and
- until early 2015, the hospital projects were included in the Government Major Projects Portfolio (GMPP) which is overseen by the IPA. They were removed from the GMPP at the request of the Department of Health, as responsibility for the projects lay with the Trusts and not the Department, following the Health and Social Care Act 2012 which provided for widespread reform of the health system in England.[7]

4 National Audit Office, *Performance of PFI Construction – a review by the Private Finance Practice*, October 2009.
5 House of Commons Public Administration and Constitutional Affairs Committee, *After Carillion: Public sector outsourcing and contracting*, Seventh Report of Session 2017–2019, HC 748, 3 July 2018.
6 The Department of Health is now the Department of Health & Social Care.
7 Comptroller and Auditor General, *Projects Leaving the Government Major Projects Portfolio*, Session 2017–2019, HC 1620, National Audit Office, 19 October 2018.

Figure 2a

The Private Finance Initiative (PFI) scheme for Midland Metropolitan

The scheme was to be financed by both the public and private sectors



Notes

1 The Midland Metropolitan project used a 'PF2' model in which government takes an increased role compared to 'classic' PFI, including two Cabinet Office civil servants being directors of The Hospital Company (Sandwell) Ltd.

2 As part of the PFI agreement, IUK Investments Ltd and Dukehill Investments Ltd paid a premium for purchasing the shares. IUK's share was paid direct to Carillion Construction.

3 The figure shows the cash to be provided without adjusting for inflation or the time value of money. Not all the proposed cash from equity and debt providers or the trust was received before Carillion went into liquidation. Carillion's liquidation meant it was unable to provide its share of the shareholder loan, but an equivalent amount had been lent by banks under a temporary facility known as an equity bridge loan.

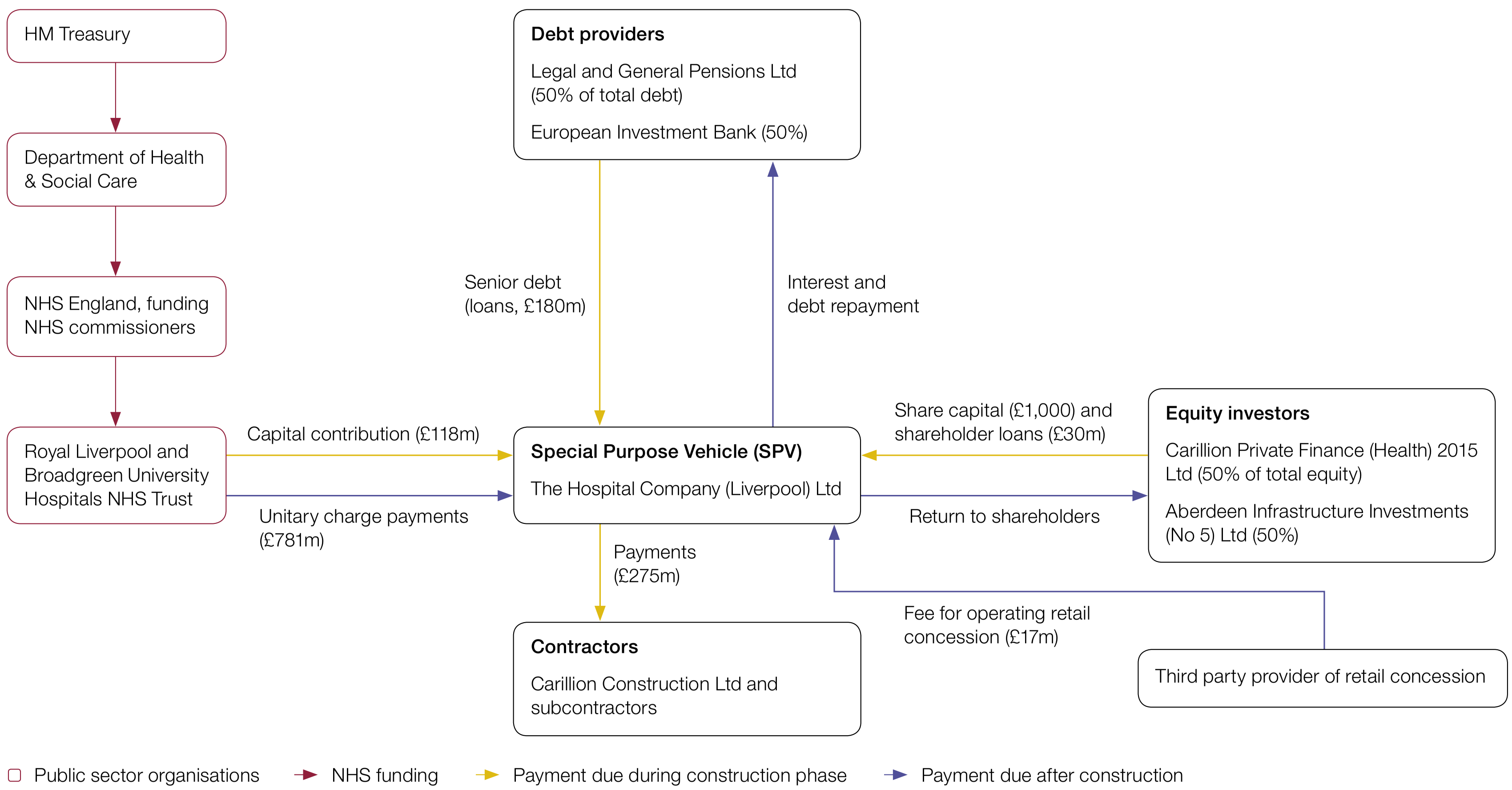
4 The Hospital Company (Sandwell) Ltd is referred to as 'the PFI company' in this report.

Source: National Audit Office analysis of scheme's financial information

Figure 2b

The Private Finance Initiative (PFI) scheme for Royal Liverpool

The scheme was to be financed by both the public and private sectors



Notes

1 In December 2017, Aberdeen Asset Management sold its 50% shareholding in the Hospital Company (Liverpool) Ltd to the Pension Infrastructure Platform (PiP).

2 The figure shows the cash to be provided without adjusting for inflation or the time value of money.

3 The Hospital Company (Liverpool) Ltd is referred to as 'the PFI company' in this report.

Source: National Audit Office analysis of scheme's financial information

Contingency planning for the failure of Carillion

1.8 In September 2017, following Carillion's second profit warning, the Cabinet Office requested public bodies with Carillion contracts to provide contingency plans. The Liverpool PFI company (The Hospital Company (Liverpool) Ltd) and the Liverpool Trust both submitted contingency plans to the Cabinet Office. These focused on Carillion's facilities management services at the existing hospital, as these were operational public services, but the Trust's plan also included the immediate risks to the construction of the new hospital. Midland Metropolitan did not use Carillion's facilities management services and so there was no requirement for the Cabinet Office to ask the PFI company or the Sandwell Trust for service contingency plans.

1.9 Under the PFI model, the PFI companies bear the financial risk of completing their projects. The Department of Health & Social Care, NHS Improvement, the Cabinet Office, HM Treasury (the Departments) and the Trusts thus believed that the PFI schemes would continue if Carillion failed, if necessary with replacement construction contractors.

1.10 The PFI companies' own contingency planning assumed that construction would be disrupted if Carillion failed while they found new contractors. They focused on ensuring they were able to step in and secure the site and had the information they needed to replace Carillion as a prime contractor.

Progress before Carillion's collapse

1.11 Both hospital projects had significant difficulties before Carillion's collapse and their opening had already been delayed (**Figure 3**).

Problems at Midland Metropolitan

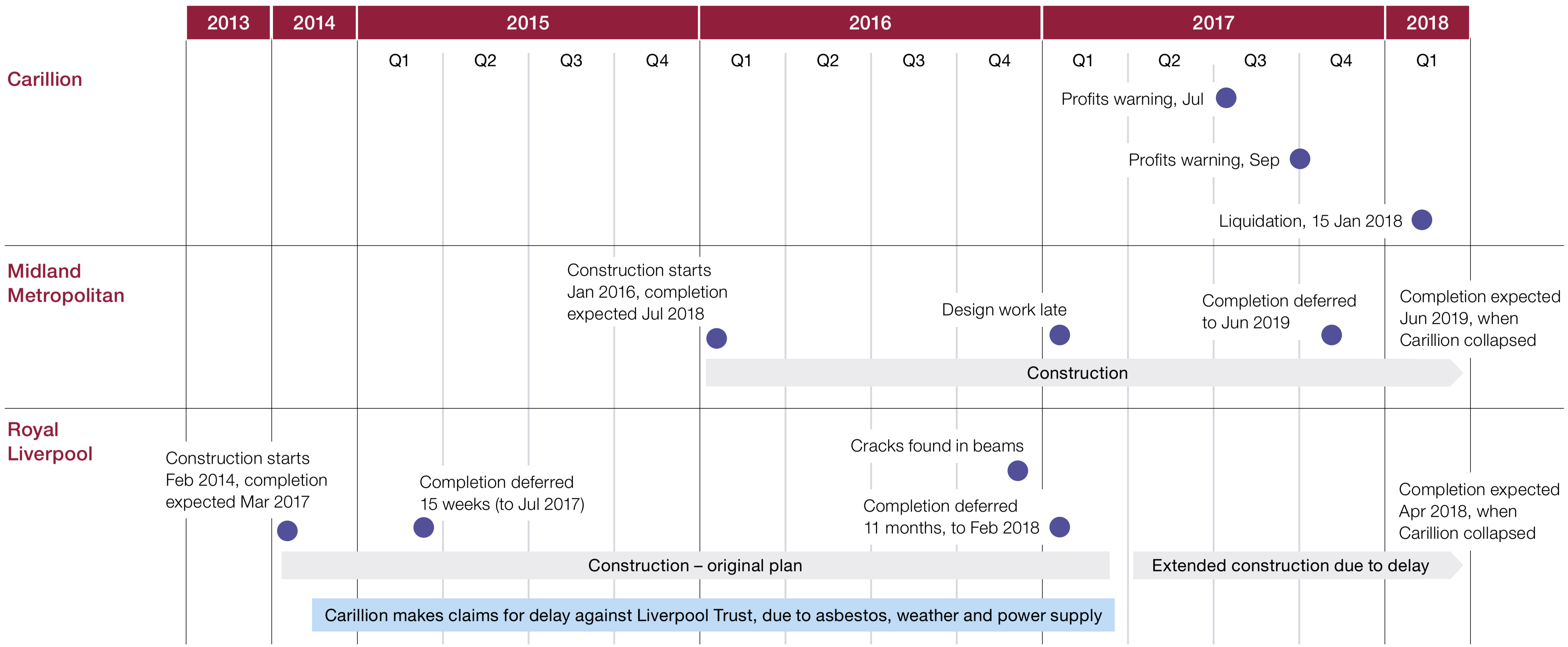
1.12 Construction on the Midland Metropolitan project started in January 2016 and the hospital was originally expected to be operational by October 2018. But as early as February 2017, Carillion informed the Trust that delays in agreeing its subcontractor Aecom's design of the mechanical, electrical and plumbing systems – the detailed design that showed how the necessary electricity, IT, gas and water services would fit into the available space – would delay the programme by up to 23 weeks.

1.13 By May 2017, much of the structural frame had been completed but building systems, external and internal finishes were yet to be installed. Carillion informed the Trust that it had still not received the detailed mechanical, electrical and plumbing system design from its subcontractor Aecom and that it was now working towards a practical completion date of February 2019.

1.14 Carillion accepted the revised design in September 2017, when it also discussed a practical completion date of June 2019, 11 months later than originally planned.

Figure 3

The Midland Metropolitan and Royal Liverpool projects before Carillion's collapse



Source: National Audit Office

1.15 Aecom told us that it disagreed with Carillion's account of the causes of delay. It said that Carillion's poor management caused the delays by appointing subcontractors and suppliers late, making multiple changes to the design and extending the scope of Aecom's work. Aecom continues to work on the project to finish the hospital.

Problems with the Royal Liverpool

1.16 Construction on the Royal Liverpool project started in February 2014 with a planned completion date of March 2017. However, in May 2014 Carillion found asbestos in the ground on the site and made a claim against the Trust for the cost and delay this would cause. Between 2014 and the end of 2016, Carillion made several more claims for delay to the Trust for various causes including bad weather, issues with the power supply and the discovery of further asbestos. These claims were disputed by the Trust and were not resolved at the time of Carillion's liquidation. In May 2017 Carillion informed the Trust that the project was delayed by 11 months and Carillion and the Trust agreed a revised timetable to completion.

1.17 In December 2016, a construction worker discovered a crack in one of the concrete beams in the third floor of the building where the weight of the upper floors, which are set at an angle to the lower floors, transferred to the lower structure. Carillion investigated while work continued during 2017 and found cracks in three beams. By December 2017, just before Carillion went into liquidation, the hospital was at a late stage of construction, with interior fit-out almost complete. Carillion told the Trust that the issues with the beams would be fixed by February 2018 and estimated that the build should be complete by mid-April 2018, 13 months late.

1.18 In April 2018, after Carillion collapsed, the PFI company commissioned Arup to review the structural design, including the safety concerns indicated by the cracked beams, and perform a fire safety review. To assess the structure, in which the upper floors are offset from the lower ones, Arup produced 3D models of the building and discovered that the original design had significant shortfalls. Arup produced an interim report at the end of April 2018 that identified serious problems with the structure of the building and that it needed strengthening in several locations.

1.19 In September 2018 Arup reviewed the external cladding of the building and found that it did not conform to the relevant fire regulations. When estimating the costs to complete Royal Liverpool in August 2018, the Departments' 'recovery group' working on the two projects (paragraph 2.11) estimated that the cost of fixing the cladding was £5 million. Further work has since revealed that the cost of fixing the cladding will be about 10 times this initial estimate and that there may also be deficiencies in the internal fire protection and the mechanical, electrical and plumbing systems.

1.20 By October 2018 the number of parts of the structure that required significant rectification had increased to about 100. Arup proposed design solutions for each of these parts, to be addressed by around 70 structural interventions including new steelwork and reinforced concrete. These required some interior walls, wiring, piping, and heavy machinery and equipment to be stripped out, mainly across three floors of the hospital. In some cases this involved innovative engineering solutions.

Responsibility for the design problems

1.21 PFI arrangements are meant to lead to better design and performance by transferring the risk to the most appropriate party. The Trusts are meant to be able to require the PFI companies to build the hospitals to the required specification. The PFI companies and investors are meant to rely on their contractors to manage the design of the projects. The investors' payments to the PFI companies are made in line with technical adviser reports that track progress against plan and provide no assurance over the design. We have not looked at what went wrong with the design process within Carillion and its subcontractors. NHS England & NHS Improvement (NHSE&I) and some individuals involved in the projects told us that one of the causes may have been that Carillion's original pricing for the two construction contracts was too low to meet the required specification.

Part Two

Restarting the hospital projects

2.1 In this Part we explain the action that central government, Sandwell and West Birmingham Hospitals NHS Trust (the Sandwell Trust) and Royal Liverpool and Broadgreen University Hospitals NHS Trust (the Liverpool Trust) took on the hospital projects after Carillion collapsed in January 2018, up to the termination of the two Private Finance Initiative (PFI) schemes. We set out:

- the immediate action following Carillion's collapse;
- attempts to restart the projects and the termination of The Hospital Company (Sandwell) Ltd and The Hospital Company (Liverpool) Ltd (the PFI companies); and
- the public financing of the projects and how new contractors were obtained.

Immediate action following Carillion's collapse

2.2 When Carillion collapsed in January 2018, construction work on both sites stopped and the Trusts and the PFI companies worked together to maintain their respective hospital sites in a stable state. The Cabinet Office provided funding to the Official Receiver on both hospitals to physically secure the sites and retain key staff. The Trusts and the PFI companies:

- physically secured the sites;
- identified and retained key Carillion staff;
- identified potential replacement contractors;
- at Royal Liverpool University Hospital (Royal Liverpool), maintained services such as plumbing in the parts of the new hospital that had been completed to ensure infection control. This included turning the taps on and off each day;
- prepared schedules of work to ensure that building work could be re-started efficiently; and
- assessed the projects' finances and the costs to complete the hospitals.

The failed attempt to restart the projects

2.3 Carillion's collapse meant both PFI companies were at risk of running out of money. Because PFI companies are designed with little contingency funding as they pass the risks to their contractors, the PFI companies were reliant on Carillion's commitment to finish the hospitals at the agreed price. However, as Carillion had been making a loss on both contracts when it collapsed, it was likely that any replacement contractor would charge the PFI companies more to finish the work.

2.4 As a result, it became highly unlikely the PFI companies would return any money to their shareholders or pay their lenders in full. This put the lenders, in effect, in charge of the PFI companies. From June 2018, when the Official Receiver stopped funding maintenance of the sites, the lenders funded all work on the sites through the depletion of their existing funds in the PFI companies.

2.5 The Department of Health & Social Care advised the Minister of State for Health in January 2018 that the cost to complete the Midland Metropolitan Hospital (Midland Metropolitan) exceeded the funds available to the PFI company, by up to £145 million. Without further intervention, the PFI company could not complete the hospital.

2.6 Meanwhile, with Royal Liverpool already nearing completion, the lenders, the Liverpool Trust and the central government Departments – the Department of Health & Social Care, NHS Improvement, HM Treasury and the Infrastructure and Projects Authority (IPA) in the Cabinet Office – worked on the basis that the Royal Liverpool PFI company would be capable of replacing Carillion and completing the hospital with the remaining funds left to the company, the extra costs covered by the lenders getting a reduced return. It was not until July 2018 that the full extent of the problems at Royal Liverpool began to be known. **Figure 4** overleaf summarises the timeline of events during 2018. We set out what was happening at each stage below.

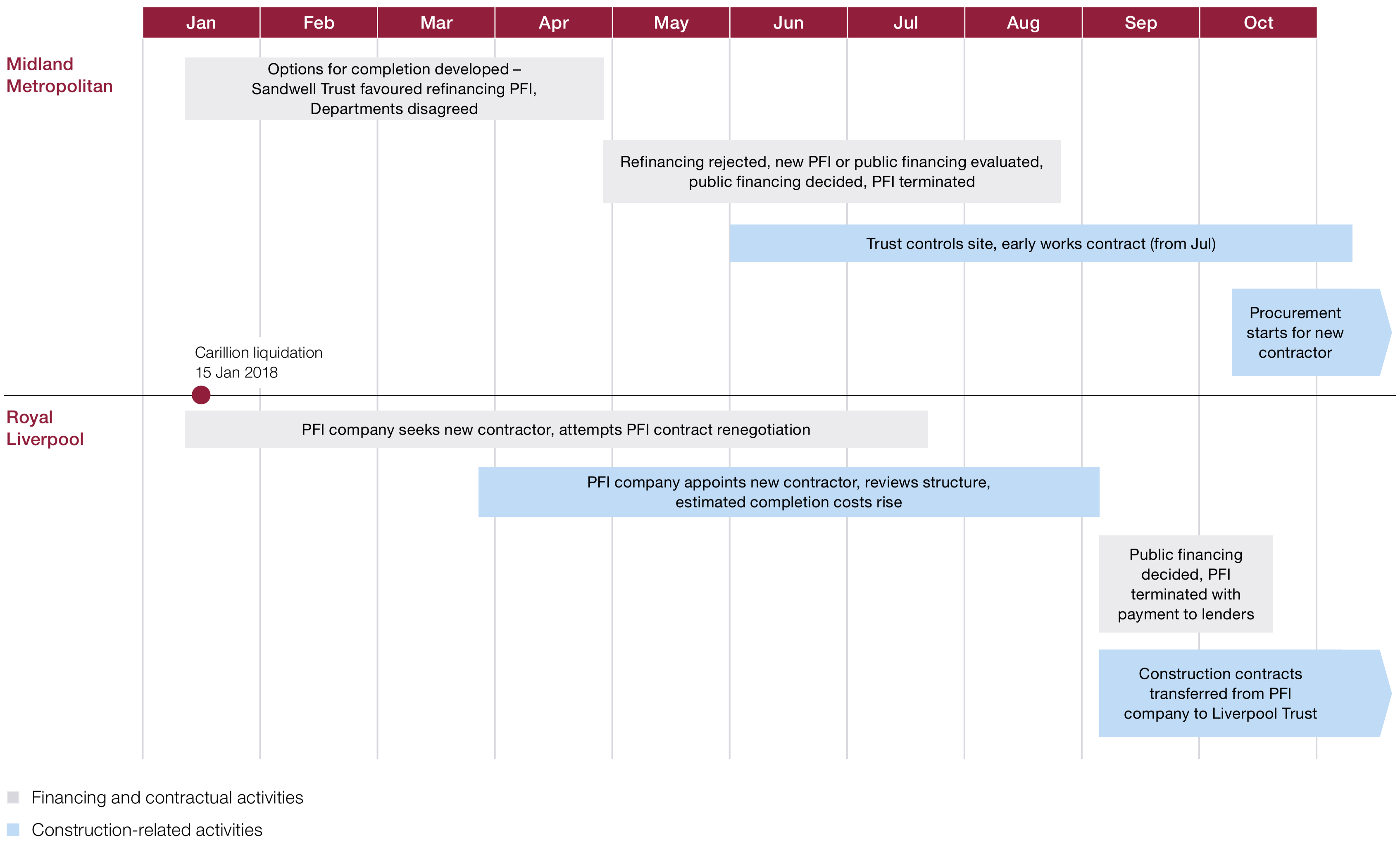
Attempts to restart the Midland Metropolitan using PFI

Attempts to refinance the Midland Metropolitan PFI scheme

2.7 Between January and April 2018, the Sandwell Trust, the PFI company and its lenders worked with the IPA and the Department of Health & Social Care to develop options to complete the hospital (**Figure 5** on page 25). The three options were to:

- refinance the existing PFI scheme, including additional upfront public funding as well as extra private finance (which the Trust would need to later repay);
- set up a new PFI scheme; or
- terminate the PFI scheme and provide direct funding to complete the hospital.

Figure 4
Restarting the hospital projects: January to October 2018



Source: National Audit Office

Figure 5
Options to finish building the Midland Metropolitan hospital

Option	Description	Additional cost to taxpayer over original PFI scheme	Construction and financial risks	Estimated completion
A	Re-finance existing PF2	Additional public funding. Lenders get their money back, potentially at a reduced return.	Construction risks on Carillion work passed to the Trust except where warranties could be bought from subcontractors.	2020
B	Re-tender PF2	Lenders do not get all their money back. Taxpayer pays the difference between the previous PF2 and the new PF2 project.	Ownership of risk to be transferred to new contractor.	2021
C	Public financing	Lenders do not get all their money back. Taxpayer pays the difference between the previous PF2 and the new, directly contracted project.	Construction risks on Carillion work passed to the Trust except where warranties could be bought from subcontractors.	2021

Source: National Audit Office

2.8 The Sandwell Trust favoured refinancing the existing PF2 scheme, as it believed this would be the quickest way of completing the hospital, some 18 months faster than re-tendering the project. The Trust worked with the lenders and presented its proposal (Option A) to the government in April 2018. This included:

- an agreement in principle with construction contractor Skanska to take on the work; and
- a proposal for the public sector to put in an additional £35 million to £43 million upfront and extend the Trust's £19.6 million annual unitary charge payments by five years at the end of the contract at a cost of approximately £100 million.

2.9 The European Investment Bank (EIB) also approached the Chancellor of the Exchequer directly with a request for further funding for the lenders. The Chancellor wrote to the Chair of the EIB to refuse additional government funds.

2.10 The Department of Health & Social Care and the IPA assessed the costs and benefits of Option A to refinance the PFI scheme and concluded that it offered poorer value for money than the other options under consideration. They and HM Treasury also wanted to avoid any 'bailout' of the PFI company as this was contrary to government policy on PFI; could set an unhelpful precedent; and would likely lead to the Office for National Statistics deciding to reclassify all PFI debt as part of Public Sector Net Debt because it saw the risks of PFI projects reverting to the public sector.[8]

2.11 In early May 2018 the Department of Health & Social Care wrote to the Trust, following approval from the Chief Secretary to the Treasury, to formally reject the refinancing proposal. While further options were being considered the Trust expressed concerns to the Department of Health and Social Care about the need to work better together to find a solution. The Department set up a 'recovery group' led by a civil servant director to coordinate the rescue of the Midland Metropolitan project and ensure that all the central government bodies involved in approving the proposals were involved in their development, including the Department, NHS Improvement, the IPA and HM Treasury.[9] Officials from these bodies who had been involved in the earlier work to assess Option A, now became members of the recovery group.

2.12 The Departments' rejection of the refinancing option led the lenders to formally withdraw their support and further funding from the project. The remaining contractors working on the site were made redundant by the Official Receiver by early June. The Departments approved the funding for 'early works' to manage the site and prevent further dilapidation until a contractor to complete the new hospital could be re-procured. In July the Trust formally terminated its contract with the PFI company and took direct control. The Trust appointed Balfour Beatty as its 'early works' contractor in early October.

Attempts to find an alternative PFI provider for the Midland Metropolitan

2.13 Between April and June 2018, the recovery group worked with the Trust to assess the other two options for completing the Midland Metropolitan, either by setting up a new PFI scheme (Option B) or by providing public financing (Option C). The recovery group's modelling found that there would be a small value-for-money advantage in a new PFI scheme. The Trust told us that in 2018 it made clear that it did not support this assessment as the Trust believed that a new PFI scheme's procurement would involve further delay and probable risk of failure. The Trust favoured public financing as the quickest way of completing the hospital after its preferred option of refinancing the existing PFI scheme was discounted.

8 In December 2018 the Office for National Statistics estimated that if Public-Private Partnerships (such as PFI and PF2) that were classified as off-balance sheet for statistical purposes at the end of March 2018 were instead recorded on the government balance sheet, this would add approximately £28 billion to measures of public sector debt. Available at: www.ons.gov.uk/economy/governmentpublicsectorandtaxes/publicsectorfinance/articles/widermeasuresofpublicsectornetdebt/december2018/pdf

9 A senior civil servant in pay band 2.

2.14 The group conducted market research interviews with five financial services companies and five major construction firms to see if a new PFI would be possible. This concluded that potential private investors and construction firms would not accept any financial risk of a problem later arising from the work Carillion had already done. This made a PFI scheme or a fixed-price construction contract impractical, as it meant that the private sector would not accept the risk of building and maintaining the hospital.

The decision to provide public funding to complete the Midland Metropolitan

2.15 The Departments decided that they had no option but to abandon the use of PFI. The Department of Health & Social Care announced the decision to publicly finance the completion of the hospital in August 2018, after it had received a recommendation from the Trust's board.

Attempt to restart the Royal Liverpool PFI scheme

The failure of the Royal Liverpool PFI scheme

2.16 Between Carillion's collapse in January 2018 and July 2018, it seemed likely that Royal Liverpool could be completed during 2018 under the existing PFI arrangements. The PFI company looked for a construction contractor to replace Carillion. In March 2018, following discussions with three potential firms, the PFI company terminated Carillion's contract and appointed Laing O'Rourke as construction contractor. Laing O'Rourke's subsidiary Crown House Technologies had been providing mechanical, electrical and plumbing services to the hospital project before Carillion's collapse.

2.17 The extent of the costs associated with the structural problems began to emerge over the months up to July 2018. In April, the PFI company commissioned Arup to assess the extent of the structural problems. Early indications from Arup to the PFI company suggested that the problems with the beams were significantly more extensive than expected (paragraph 1.17). In July the lenders told the Trust that the estimate for completing the hospital had increased from £55 million to £107 million, and they were not yet sure of the full extent of the problems. At this point, the Trust believed the hospital could be completed by September 2019 but would probably be further delayed.

2.18 Between March and September 2018, the lenders proposed several rescue packages for the Royal Liverpool hospital. These included additional funding from the lenders in return for various changes to the payment and compensation terms. In September the lenders proposed a package in which they would complete the hospital in exchange for a cap on costs and liabilities and the removal of responsibility for maintaining the building once it was built. The Trust, the Department of Health & Social Care and HM Treasury rejected all these proposals because they transferred risk back to the public sector.

2.19 In early September 2018, following the experience of Midland Metropolitan, the lenders and the central government recovery group concluded that given the growing number of problems with the hospital it was very unlikely that the current PFI scheme would be commercially viable or that another could be set up. They agreed to terminate the PFI agreement as smoothly and rapidly as possible.

Termination of the Royal Liverpool PFI scheme

2.20 Members of the recovery group looked into two options for termination:

- **Pursuing a termination under the contract for default**. In line with the standard PFI contract, this would require the Trust to provide at least 80 business days' notice to the lenders of their intention to terminate the contract. The Departments also believed that there was a risk lenders would further delay the termination through a formal dispute or legal action and that the lenders could mothball the site and abandon the existing contracts, causing additional damage, cost and delay.
- **Agreeing a consensual termination with the lenders.** This would bypass the full process set out in the contract and the potential for a dispute or litigation. It would also allow the Trust quicker access to the site, allow the existing contractors to be transferred (novated) to the Trust, and allow work to continue immediately.

2.21 The Department of Health & Social Care and the IPA estimated that a termination for default would lead to a lower amount of compensation for the lenders but that avoiding the delay and cost of litigation under a consensual termination would leave the Trust better off so long as the settlement was £51 million or less. The Department of Health & Social Care and the IPA therefore suggested to the Trust that it seek a quick negotiated settlement of the compensation, including the transfer (novation) of the Laing O'Rourke contract from the PFI company to the Trust to enable construction to continue without a break.

2.22 After negotiation, the Departments, the Trust and the lenders agreed that the Trust would pay the lenders £42 million. This was paid in October 2018, funded by the Department of Health & Social Care once the Trust, the lenders and the Departments had agreed to terminate the PFI contract.

2.23 In their negotiation of the £42 million termination payment, the Department of Health & Social Care and the IPA used the contractual approach as a benchmark. According to the PFI contract, the Trust would be required to pay compensation to the PFI company for early termination of the contract. In general terms, this is calculated by subtracting the estimated costs of completing the hospital from the value the lenders could expect to receive over the course of the contract, once the hospital was built.

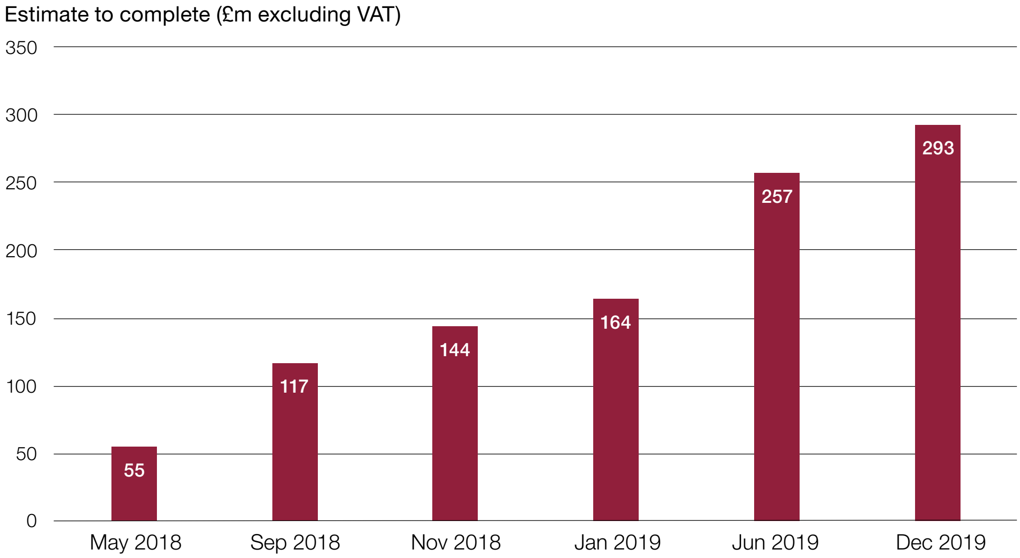
2.24 In calculating the £42 million termination payment, the Department of Health & Social Care and the IPA had to use information provided by the PFI company, the lenders and the lenders' advisers. They received various updates on the cost to complete in the run-up to agreeing the termination payment and the actual value to use was highly uncertain. For example, on 3 September the PFI company wrote to the Department of Health & Social Care and the IPA that it was "impossible to conclude" what the cost to complete was likely to be because the number of problems with the beams had increased and the external cladding had failed to meet building regulations and may have to be replaced. The Arup report on structural issues was still in draft in September 2018 and the lenders only gave the Trust a limited opportunity to review the draft before termination.

2.25 The Department of Health & Social Care and the IPA told us that they calculated the value-for-money case for offering £42 million using an estimate of the present value cost to complete the hospital of £105 million, based on information provided by the lenders and their advisers in late September. They then added a £12 million (present value) allowance for the risk that it might be higher than this, giving a present value cost to complete of £117 million. The business case submitted to ministers also stated that the cost to complete could be lower than £117 million and did not test what would happen if it were even higher.

2.26 Estimates of the cost of completing the hospital continued to rise through 2018 and into 2019 (**Figure 6**). By January 2019, following further work by Arup and others, the Trust estimated the completion cost had risen to £164 million. Had this estimate been used it would have reduced the contractual compensation to zero. By December 2019 the completion cost estimate had risen to £293 million, including the current estimated cost of fixing the cladding (Figure 6 and paragraph 1.19).

Figure 6

Royal Liverpool estimated cost to complete – May 2018 to December 2019



Notes

1 All numbers are taken from different documents and it is not clear from the documents that they are on a strict like-for-like basis. All numbers are estimated construction cost net of VAT.

2 May 2018 figure from the Royal Liverpool construction update May 2018.

3 September 2018 figure from Infrastructure and Projects Authority and Department of Health & Social Care value-for-money analysis, base case.

4 November 2018 figure following due diligence by the Liverpool Trust on the PFI company's figures.

5 January 2019 figure from the January 2019 draft business case cost to complete.

6 June 2019 figure from the June 2019 final business case cost to complete.

7 December 2019 figure from the Trust's latest forecast (stated in 2018-19 terms) following assessment of cladding costs.

Source: Departments' reports to ministers, Liverpool Trust board papers, forecasts and business cases

2.27 The lenders demanded that the payment be finalised before 30 September 2018, the date the contract required the PFI company to provide the finished hospital before it was in default. The Department of Health & Social Care and the IPA told us that they were not able to negotiate making the payment contingent on the actual completion cost.

Public financing of the projects to complete the hospitals

2.28 By autumn 2018 the government had decided to provide public financing for the two hospital projects and to restart them with new construction contractors. The Trusts appointed new contractors using different approaches, which have affected the projects' timescales.

Finishing Midland Metropolitan

2.29 In October 2018 the Sandwell Trust launched a full procurement procedure under public procurement regulations for the main construction contract to complete Midland Metropolitan. Balfour Beatty, the Trust's 'early works' contractor, was the only eligible bidder for the main construction contract who met the qualification criteria, so there was no competitive pressure on the price. The Departments reviewed the process to mitigate the risk of an elevated price. The Trust awarded the contract to Balfour Beatty in December 2019, following HM Treasury's approval, in October 2019, of the business case to complete the hospital. The Trust believes that the need to put together a new business case for the hospital and run a full procurement process has delayed restarting construction by 15 months.

2.30 The Trust agreed a 'target price' with Balfour Beatty for its work. The contract contains risk-sharing terms by which Balfour Beatty will absorb construction costs over the target price and share savings with the Trust if they complete the contract under the target price. The risk-sharing agreement also required Balfour Beatty to carry out due diligence on the work of Carillion and its subcontractors on the site before agreeing the final contract. The Trust has appointed the construction consultancy Gleeds as its project manager, to help manage Balfour Beatty.

2.31 The Trust has also obtained warranties for nearly all the prior work carried out by Carillion's subcontractors in addition to those purchased from the PFI company, where it was possible to re-employ those subcontractors. This and the risk-reward contract with Balfour Beatty means that the Trust will only pay extra for unwarranted issues with Carillion's work which become evident after the contract is signed.

2.32 The Trust appointed Engie in January 2020 as a replacement facilities management company to maintain the Midland Metropolitan once it is complete.

Finishing Royal Liverpool

2.33 As part of its termination agreement, the Royal Liverpool PFI company agreed to transfer ('novate') several contracts to the Trust including those with Arup as the structural engineers and with Laing O'Rourke as the 'managing contractor'.

2.34 These appointments were without any competition and were not advertised, which is contrary to the requirements of the public procurement regulations to competitively tender the work or explain the legal basis for not doing so, in the advertisement of the contract award. The Trust's board recognised that the transfer of these contracts could be challenged and sought legal advice on this. The board decided to go ahead with the contract transfers as part of the termination agreement, so that construction could restart as soon as possible and warranties for work before Carillion's collapse could be maintained. The Trust told us that it estimated the costs of delay at more than £2 million per month.

2.35 As the managing contractor, Laing O'Rourke is responsible for identifying and rectifying issues with the hospital building and finalising the construction project by managing some 140 other contractors, each of whom will be contracted through a work package separately contracted with the Trust. The Trust has worked with Laing O'Rourke to re-engage as many of the original Carillion subcontractors as possible to maintain warranties for works already carried out. By June 2019 about 40 work packages were in place. Each work package was awarded through a single tender action without competition.

2.36 In May 2019 the Trust told its board that a few of the 140 work packages exceeded European Union procurement thresholds and that it had sought legal advice on the risk of challenges to the procurements. This advice acknowledged that the Trust's preferred way forward, of taking on the contracts itself, could be subject to a successful legal challenge, but soundings of the market suggested strongly that the risk of other contractors challenging the Trust was low. As in the case of the novated contracts, the board wanted to avoid adding extra time and costs to the hospital's completion and maintain warranties for work before Carillion's collapse, where possible.

2.37 Laing O'Rourke has already stripped out fittings on two of the ward floors and the plant and equipment floor to access the structure. The remaining work at Royal Liverpool includes:

- reinforcing the structure with steelwork and additional reinforced concrete, to address the shortcomings that Arup's 2018 work described;
- repeating the interior fit-out for three floors, to replace fittings and decoration which have been removed to carry out the reinforcement work;
- fire testing all fixtures and fittings;
- reinstalling the plant and equipment; and
- replacing exterior cladding, which does not conform to current fire regulations.

2.38 Although the Trust has sought to get a fixed price for each work package, it has no certainty over the total amount of work, the number of work packages needed or the total cost of completing the hospital. This exposes the Trust to the risk of increases in the current cost estimate, including any discovery of further problems with Carillion's build. Laing O'Rourke has no contractual incentives to manage costs.

2.39 The Trust has recognised the extent of this risk and engaged the construction consultancy Gleeds to manage the construction cost of the project. Each piece of work is assessed by both the Trust and by NHS England & NHS Improvement's (NHSE&I) estates team before being commissioned from either Laing O'Rourke or the other contractors. In addition to the warranties and guarantees from Carillion's subcontractors who originally did the work that the Trust purchased from the PFI company, the Trust has also sought to obtain new warranties and guarantees from Carillion's subcontractors, where it has been able to reinstate them to complete the hospital. In some cases subcontractors are repeating work that they had already done for Carillion.

2.40 Phases 2 and 3 of the Royal Liverpool project – to demolish the existing hospital and develop an underground carpark and landscaped public plaza in its place – are currently unfunded and subject to future business cases. The cost of this was not included in the PFI project and is currently estimated at £38 million.

Part Three

The impact on the projects

3.1 In this Part we explain the impact of the construction problems and Carillion's collapse on the two hospital projects. We set out the:

- delays in opening the new hospitals and the impact on the local communities;
- impact on the costs of the projects and who will pay; and
- overall costs of Carillion's collapse, updated from our June 2018 report.

Delays to the two hospitals and their impact

The delay to Midland Metropolitan

3.2 The Midland Metropolitan Hospital (Midland Metropolitan) was originally expected to open in October 2018 and is currently expected to open in July 2022, three years and nine months late (see Key facts).[10] This is due to:

- 11 months' construction delay known about before Carillion collapsed, due to design problems (paragraphs 1.12 to 1.15);
- seven months' delay while the Sandwell and West Birmingham Hospitals NHS Trust (the Sandwell Trust) and the Departments – the Department of Health & Social Care, NHS Improvement, the Infrastructure and Projects Authority (IPA) in the Cabinet Office and HM Treasury – attempted to rescue the PFI project (paragraphs 2.7 to 2.12). During this period only basic maintenance work was carried out, initially by contractors funded by The Hospital Company (Sandwell) (the PFI company) and the lenders, then under an 'early works' contract with Balfour Beatty which HM Treasury approved in June 2018;
- 15 months spent re-procuring the new contractor (paragraph 2.29); and
- 12 months' further delay because the contract with Balfour Beatty is expected to take longer than Carillion had promised to complete the hospital.

10 The expectation at Final Business Case when the PFI was signed.

3.3 The delay in opening Midland Metropolitan means that local people will need to wait longer for the improved services set out in the new hospital's business case and patients will need to use the existing City Hospital and Sandwell Hospital for longer. Most of the buildings on these sites are at least 20 to 30 years old, have few single rooms, and half of the City Hospital was built before the foundation of the NHS in 1948. They have high maintenance costs. Some patients need to make long journeys between different hospital departments or between the two sites, a journey of up to 30 minutes.

3.4 The delay to the opening of Midland Metropolitan will also affect the wider plan to redesign health services in Birmingham, involving five NHS bodies and two local authorities. Midland Metropolitan is intended to provide acute hospital services on a single site while community and home-based services across Birmingham will be expanded. The new hospital is expected to improve the Trust's ability to recruit and retain staff because of its modern, purpose-built facilities.

The delay to Royal Liverpool

3.5 The new Royal Liverpool University Hospital (Royal Liverpool) was originally expected to open in summer 2017. Under the Liverpool University Hospitals NHS Foundation Trust's (the Liverpool Trust's) current plan which has yet to be finalised, the construction contractor will hand over the building to the Trust in autumn 2022.[11] The Trust has not yet set an opening date but this will be more than five years after the originally planned opening of June 2017. The existing delay is due to:

- 13 months' construction delay known about at the time Carillion collapsed in January 2018 (paragraphs 1.16 and 1.17);
- 10 months spent trying to rescue the PFI project before it was terminated in October 2018 (paragraphs 2.16 to 2.19 and 2.22);
- eight further months' delay before major remedial work began in June 2019, while subcontracts and plans were prepared. During this time Laing O'Rourke carried out significant preparation work for the remedial structural work; and
- nearly three years' delay for the remedial work to the structure and the refitting of the building to be carried out.

3.6 As at Midland Metropolitan, the delay in completing Royal Liverpool means that local people need to wait longer for the improved hospital services set out in the Trust's business case. The existing hospital building and its systems, such as heating, electricity, ventilation and water, are deteriorating. In November 2019 the Merseyside Fire and Rescue Authority issued an enforcement notice requiring the Trust to improve the building's fire safety within six months. The Trust told us that it was preparing an action plan to address the issues raised in the enforcement notice, where these were not already being addressed.

11 The Liverpool University Hospitals NHS Foundation Trust was formed in October 2019 by a merger between Royal Liverpool and Broadgreen University Hospitals NHS Trust and Aintree University Hospital NHS Foundation Trust. Before October 2019, the Royal Liverpool and Broadgreen University Hospitals NHS Trust was responsible for the Royal Liverpool hospital project.

3.7 The new building is expected to provide individual patient rooms rather than wards and more up-to-date clinical equipment and technology. In the longer term, as at Midland Metropolitan, the new hospital is part of a wider redesign of health services in the local area and its delay will affect this work.

The increase in costs

3.8 The increases in the costs to both projects are set out in **Figures 7** to **12** (pages 38 to 45) and explained below. The costs below are expressed in real terms to make them easier to understand and do not show present values so do not include the time value of money. The impact of this is explained in paragraph 3.16 below. The numbers reflect what happened in the specific circumstances of these projects and cannot be used to draw value-for-money conclusions on the termination of these or other PFI projects.

The increased cost of building the hospitals

3.9 The construction problems have led the combined estimated cost of constructing the hospitals to increase by 98%. The estimated construction cost of the Midland Metropolitan has risen from £350 million expected when the PFI deal was agreed to an estimated £663 million (a rise of 89%). The estimated construction cost of the Royal Liverpool has risen from £350 million expected when the PFI was agreed to an estimated £724 million (a rise of 107%). Not all of the currently expected costs fall to the taxpayer (paragraph 3.14 below) and it is possible that the original cost was too low to meet the specification (paragraph 1.21).

The cost of maintaining the hospitals

3.10 The cost to the public sector has been affected by the rising cost of facilities management since Carillion agreed the price for maintaining the buildings in the original PFI contracts. Since Carillion collapsed, other facilities management companies have experienced financial difficulties and the Cabinet Office, which monitors these markets, expects a general price correction for previously under-priced contracts.

3.11 At Midland Metropolitan, the estimated costs of facilities management for 30 years have increased from £111 million to £177 million and at Royal Liverpool, estimated facilities management costs have increased from £117 million to £128 million.

3.12 There is a risk that the Sandwell and Liverpool Trusts will not maintain the hospitals to the same standard as expected under the PFI arrangements. At Midland Metropolitan the real-terms cost of maintaining the hospital is forecast to reduce from £75 million to £65 million. The Liverpool Trust has yet to forecast the costs of its maintenance contract.

The increased cost from the delays

3.13 Some of the increase in construction costs is due to the delay and construction inflation.[12] The delay has also increased other costs to the Trusts, including the maintenance of the existing buildings, the costs of transitioning to the new buildings and other costs such as temporary works needed for the new Clatterbridge cancer centre, being built adjoining the Royal Liverpool's site, by another NHS Trust.

The total impact on cost to the public sector

3.14 Although the total costs of the projects have risen significantly, the PFI structures mean the public sector is currently expected to pay 1% more in total for both hospitals than it would have under the PFI schemes. The expected cost to the public sector of the Midland Metropolitan hospital project has risen by 3% (from £686 million to £709 million, see Figure 8). The expected cost to the public sector of the Royal Liverpool hospital has fallen by 1% (from £746 million to £739 million, see Figure 11).

3.15 This is because the private sector shareholders, investors, insurers and Carillion have borne estimated losses of at least £603 million on the construction of both projects. This estimate is based on incomplete information about the extent of losses. Some Carillion subcontractors have also incurred losses.

3.16 The new arrangements require more of the public sector costs to be paid upfront than under the PFIs, which spread the costs over the course of the contract (Figures 8 and 11). Although the real-terms cost across both hospitals has increased by 1%, when the cashflows are discounted to take account of these timing differences, using the government's preferred social time preference rate of 3.5% in real terms, the net present cost to the taxpayer would be considered to have increased by 15%.[13]

3.17 The public sector's costs are higher than they otherwise would be because the Sandwell Trust and HM Treasury had paid £68 million and the Liverpool Trust £121 million into the PFI projects.[14] This is considerably more than was usual for PFI and was to reduce the amount of private finance needed and make the projects more affordable. It has however reduced the investors' losses accordingly.

3.18 As explained in Parts One and Two, there are risks that the cost to the public sector may rise further once the full cost of completing the Royal Liverpool is known (paragraphs 1.19, 2.26 and 2.38).

12 For example, construction prices as measured by the Construction Output Price Index (published August 2019) grew 6.2% annually between 2015 and Carillion's collapse in January 2018.

13 We set out how different discount rates can be used and how these affect the present values in our report on PFI and PF2 (Comptroller and Auditor General, *PFI and PF2,* Session 2017–2019 HC 718, National Audit Office, January 2018), paragraphs 1.27 to 1.30. The social time preference rate is intended to reflect the value society attaches to present, as opposed to future, consumption and is set by HM Treasury at 3.5% in real terms.

14 These numbers have been adjusted for inflation to put them in 2018-19 terms. This means they increase compared with numbers reported in the Trusts' accounts. The Midland Metropolitan figure also includes the contribution from IUK Investments Ltd (paragraph 1.4).

The impact on the Trusts' finances

3.19 The new arrangements require the Trust to pay the construction costs over the course of the construction, instead of spreading the costs of the construction over the 30-year operating period of the PFI contracts. The Trusts will also have to pay VAT, generally at 20%, on the new construction contracts and some other costs, whereas they did not have to pay VAT on the PFI contracts.

3.20 The Trusts are receiving additional support from the Department of Health & Social Care and NHS England & NHS Improvement (NHSE&I) to support these immediate costs. This includes an increase in their public dividend capital, which acts as a non-repayable loan from NHSE&I at 3.5% a year. The combined effect of this is that the Department and NHSE&I are paying for the front-loading of the project costs and the Trusts will be financially better off overall than if the PFI contracts had gone ahead as originally planned (Figure 9 and Figure 12).[15]

The wider costs of Carillion's collapse

3.21 In June 2018 we reported that the costs to the government of Carillion's liquidation would be £148 million. This was the cost to the Cabinet Office of ensuring that the Official Receiver could continue Carillion's service contracts without disruption until new arrangements could be made.

3.22 The Official Receiver, HM Treasury and the Cabinet Office have worked together since January 2018 to collect money owed to Carillion. As a result, the Cabinet Office now expects to be repaid some of its loan, and at the time of this report's preparation its expected loss was £62 million.[16] This does not include the additional costs to the public sector due to the delays in the two hospital construction contracts covered by this report.

15 This calculation is based on the estimated cash outlay over 30 years. We have not evaluated whether this impacts the Trusts' duty to break even, which is based on their near-term financial performance.

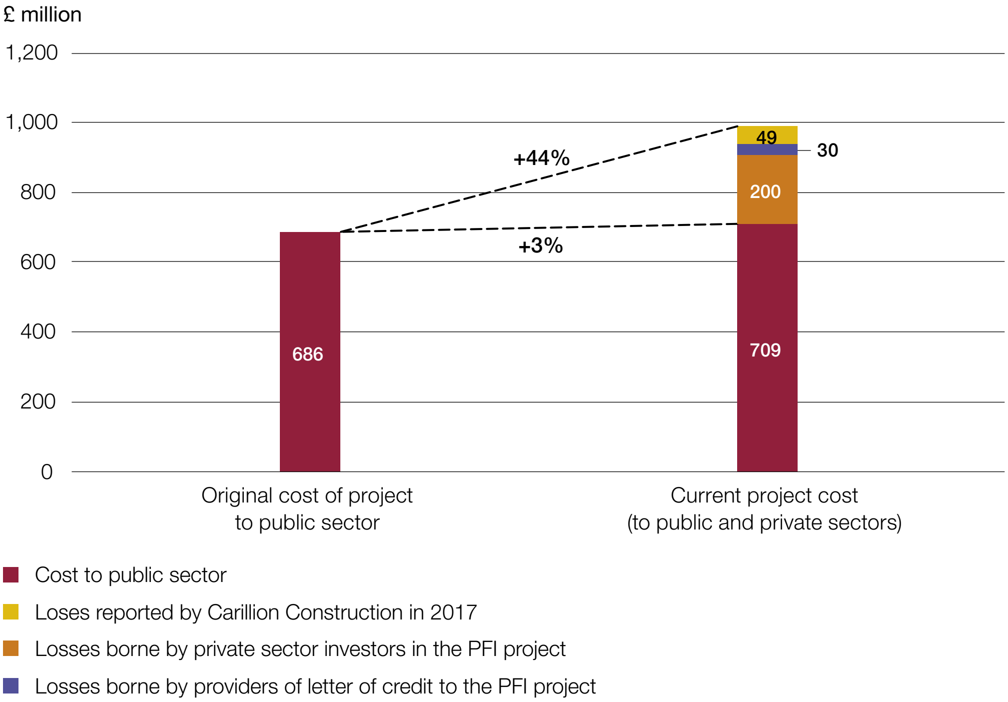
16 Letter from the Insolvency Service to the House of Commons Business, Energy and Industrial Strategy Committee, 30 September 2019.

Figure 7
The current expected cost at Midland Metropolitan

The total cost of the project to build and operate the hospital for 30 years is expected to have increased by 44% but the cost to the taxpayer is expected to have increased by only 3%

	Original expected cost of the project to the taxpayer (2015-16 to 2048-49)	Current expected cost of the project (to public and private sectors, 2015-16 to 2051-52)		Current expected cost to the taxpayer (2015-16 to 2051-52)	
	(£m)	(£m)	Increase (%)	(£m)	Increase (%)
Public sector contribution to the Private Finance Initiative (PFI) project	102	68		68	
PFI-financed contribution from private sector[2]	248	180		–	
Additional funding from letter of credit	–	30		–	
Losses reported by Carillion Construction in 2017[3]	–	49		–	
Trust's current estimate of the cost to complete construction[4]	–	315		315	
Trust's current estimate of other costs of construction including professional fees	–	21		21	
Construction period costs	**350**	**663**	**89**	**404**	**15**
Facilities management (first 30 years)	111	177		177	
Lifecyle maintenance costs (first 30 years)	75	65		65	
Interest on private finance and other costs included in the PFI unitary charge[5]	107	–		–	
The cost of maintaining the hospital building for the first 30 years	**293**	**242**	**(17)**	**242**	**(17)**
Estimated cost to private sector of breaking hedging arrangements	–	20		–	
Trust's estimate of other costs (transition and impact on related capital projects)	43	63		63	
Other costs	**43**	**83**	**93**	**63**	**47**
Total cost	**686**	**988**	**44**	**709**	**3**
Estimated net present cost	487	849	74	570	17

The increased build cost to the public sector is largely offset by losses borne by the private sector



Notes

1 The 'current' costs represent the Sandwell and West Birmingham Hospitals NHS Trust ('the Trust's') estimate at the start of December 2019. 'Original' costs are based on the PFI contract and the Trust's estimate of other costs under the original plan. We have not independently verified these estimates. Where costs are contractually linked to the Retail Price Index (RPI) they have been estimated using the Office for Budget Responsibility's forecast (published March 2019). All costs have been expressed in 2018-19 terms using Gross Domestic Product (GDP) Deflators (published June 2019) to ensure comparability. The last line shows the same costs discounted at the government's discount rate of 3.5%.

2 The 'PFI-financed contribution from private sector' includes construction costs, other costs of the PFI company, and fees and interest on private finance during construction that were included in the PFI contract. This includes the value of the construction work completed by Carillion which was assessed as £212 million. We have assumed that costs were incurred by the PFI company in line with the PFI contract until the contract was terminated. IUK contributed £3 million which we have included in the 'public sector contribution' rather than this line.

3 We have estimated construction overspend in Carillion and its supply chain using losses it reported in 2017 (adjusted for inflation). This is based on incomplete information about the extent of Carillion's losses. Carillion's subcontractors may also have incurred losses.

4 All construction costs exclude VAT. The Trust expects to pay £68 million VAT on completing construction. The Trust and HMRC do not currently agree on the VAT treatment. The £315 million figure includes the Balfour Beatty construction contract and other costs.

5 The 'Interest on private finance and other costs included in the PFI unitary charge' is calculated as the total unitary charge less the costs of construction (including fees and costs of the PFI company), facilities management, and maintenance costs over the 30-year contract.

6 Total losses borne by the private sector have been estimated at £279 million (adjusted for inflation) based on the information available and assuming that the planned investment in the PFI contract was made and will not be recovered. This information is not complete, for example we do not know the extent of losses in the supply chain, whether there will be any amounts recovered from the liquidation of the PFI company, or the extent to which losses were reduced or passed from the original investors to other organisations via fees paid during construction (for example, IUK Investments Ltd and Dukehill Investments Ltd paid Carillion a premium of £1.1 million and £287,000 when they bought their shares), or risk management activities such as insurance or securitisation.

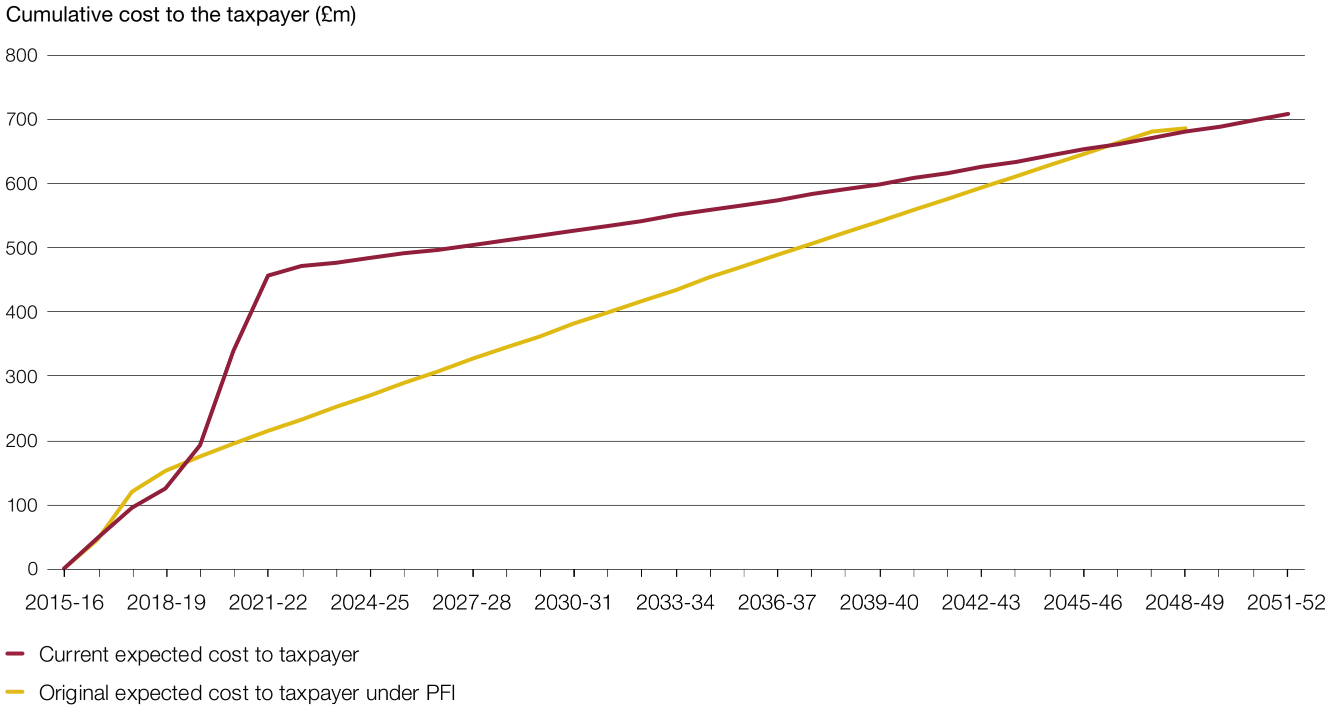
7 The £3 million invested by IUK Investments Ltd who owned 10% of the PFI company is included in the cost to the public sector.

Source: National Audit Office analysis of the PFI model and financial information from the Trust

Figure 8

The expected cost to the taxpayer of Midland Metropolitan over time

Under public funding, the expected real-terms cost to the taxpayer to build and operate Midland Metropolitan has increased by only 3%, to £709 million, but more of the costs are incurred earlier

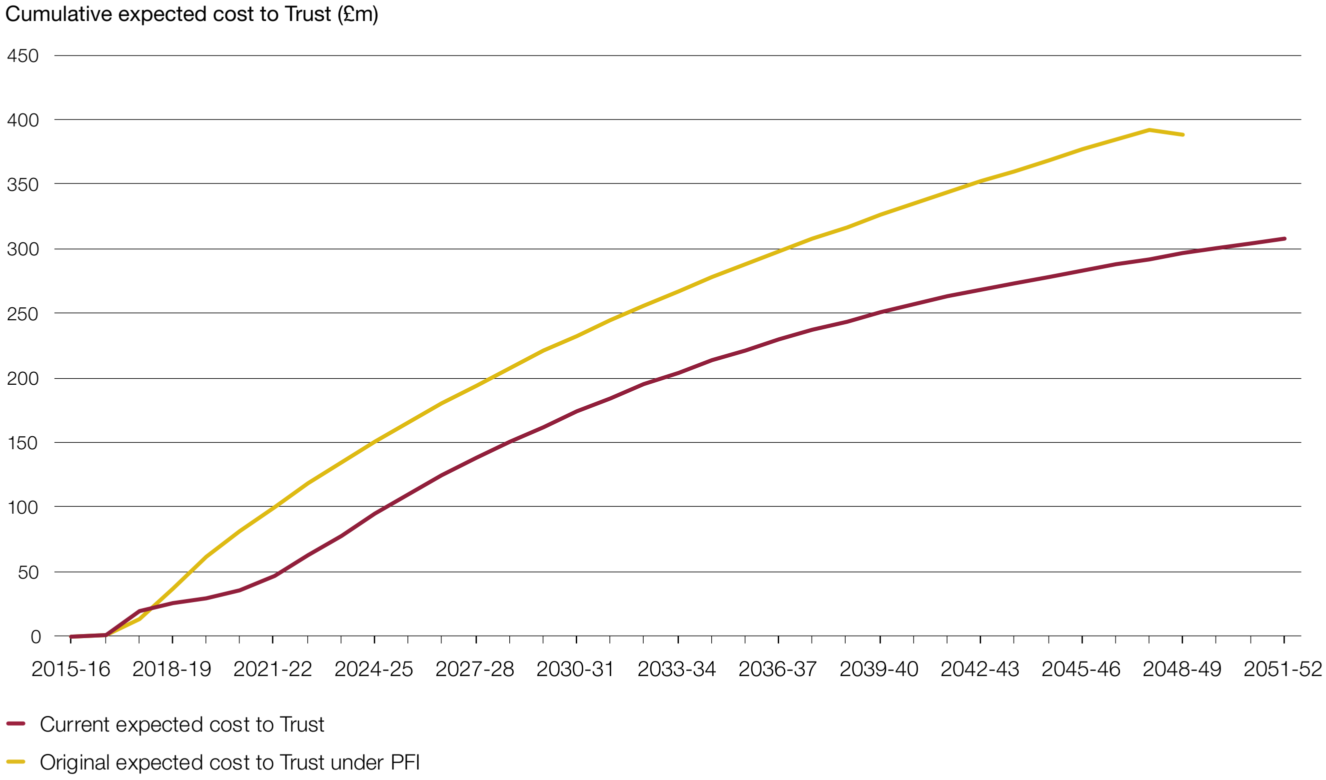


Source: National Audit Office analysis of the PFI model and financial information from the Trust

Figure 9

The expected cost to the Trust of Midland Metropolitan over time

The Department of Health & Social Care and NHS England and NHS Improvement (NHSE&I) are paying for the front-loading of the project costs so the Trusts are currently expected to be financially better off overall than if the PFI contracts had gone ahead as originally planned. The Sandwell Trust is now expected to pay an estimated £308 million in total, a reduction of £81 million



Notes

1 Shows the cumulative expected costs, in 2018-19 terms (see Figure 7), to the Sandwell and West Birmingham Hospitals NHS Trust ('the Sandwell Trust') over 30 years under the original PFI arrangement and under the current forecast.

2 The graph shows an estimate of the cash cost (in 2018-19 terms) to the Trust based on the expected accounting treatment of the original and current forecasts from Figure 7, net of funding mechanisms such as receipt of Public Dividend Capital (PDC) and including intra-government payments such as VAT and the PDC dividend. We have not modelled the impact of income generated by the hospital or changes to the value of the hospital building from revaluation or impairment as these are not yet known. The expected PDC dividend paid has been estimated at 3.5% of the average impact on net assets. The results have then been converted to 2018-19 terms in the same way as in Figure 7.

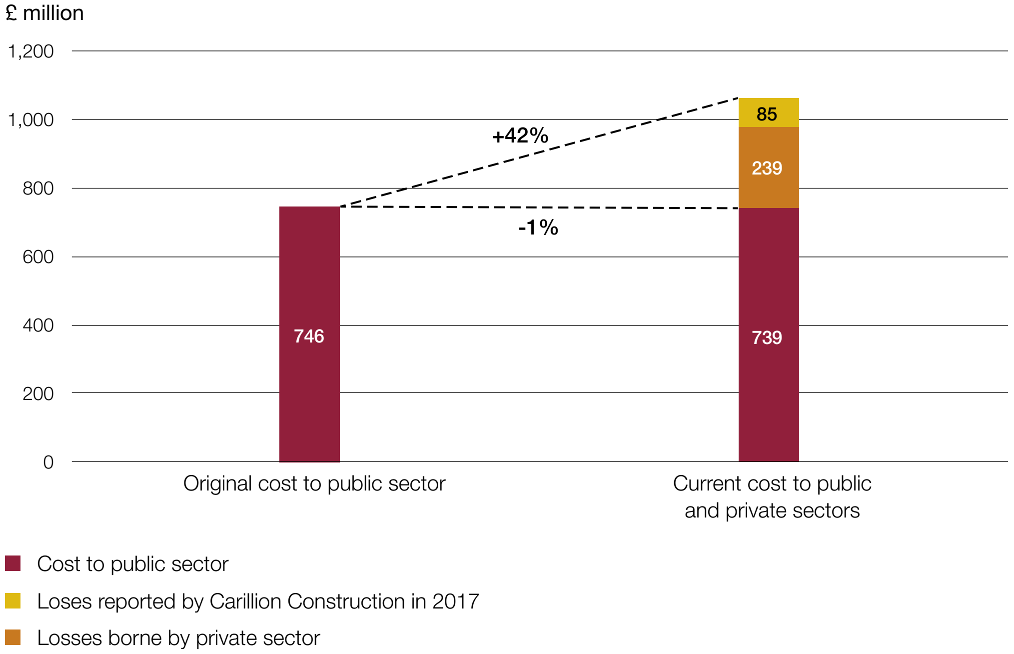
Source: National Audit Office analysis of the PFI model and financial information from the Trust

Figure 10
The current expected cost at Royal Liverpool

The total cost of the project to build and operate the hospital for 30 years is expected to have increased by 42% but the cost to the taxpayer is expected to have decreased by 1%

	Original expected cost to the taxpayer (2013-14 to 2046-47)	Current expected cost of the project (to public and private sectors, 2013-14 to 2051-52)		Current expected cost to the taxpayer (2013-14 to 2051-52)	
	(£m)	(£m)	Increase (%)	(£m)	Increase (%)
Trust's contribution to the Private Finance Initiative (PFI) project	125	121		121	
PFI-financed contribution from private sector[2]	225	225		–	
Losses reported by Carillion Construction in 2017[3]	–	85		–	
Trust's current estimate of the cost to complete construction[4]	–	293		293	
Construction period costs	**350**	**724**	**107**	**414**	**18**
Facilities management (first 30 years)	117	128		128	
Estimated lifecycle maintenance costs (first 30 years)[5]	90	94		94	
Interest on private finance and other costs included in the PFI unitary charge[6]	162	–		–	
Forecast income to public sector from retail concession[7]	–	(13)		(13)	
The cost of maintaining the hospital building for the first 30 years	**369**	**209**	**(43)**	**209**	**(43)**
Cost to public sector of terminating the PFI contract[8]	–	–	–	42	
Estimated cost to private sector of breaking hedging arrangements	–	56		–	
Trust's estimate of other costs (transition and impact on related capital projects)	2	36		36	
Trust's estimate of the cost of phases 2 and 3[9]	25	38		38	
Other costs	**27**	**130**	**381**	**116**	**330**
Total cost	**746**	**1,063**	**42**	**739**	**(1)**
Estimated net present cost	541	934	73	610	13

The increased build cost to the public sector is offset by losses borne by the private sector



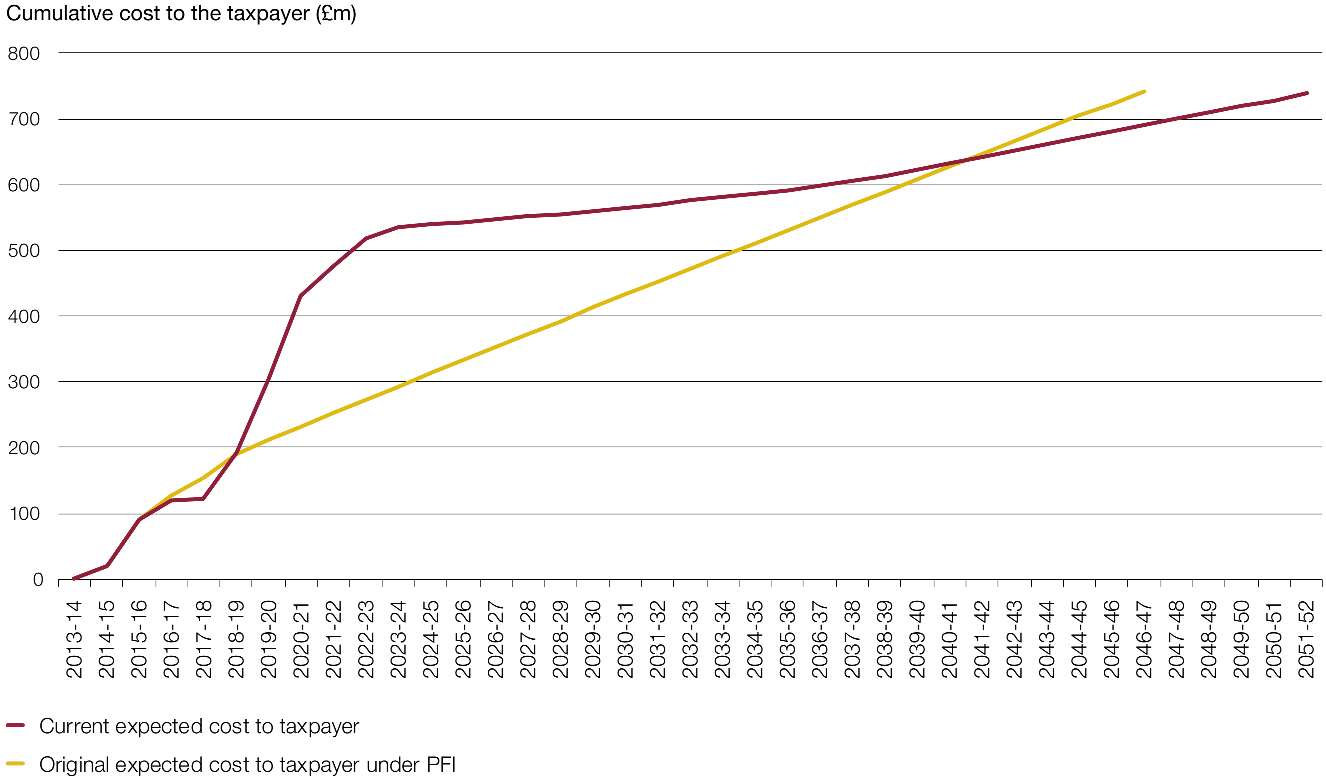
Notes

1. The 'current' costs are the Royal Liverpool and Broadgreen University Hospitals NHS Trust's ('the Trust's') latest estimate. 'Original' costs are based on the PFI model and the Trust's estimate of other costs under the original plan. We have not independently verified these estimates. Where costs are contractually linked to the Retail Price Index (RPI) they have been estimated using the Office for Budget Responsibility's forecast (published March 2019). All costs have been expressed in 2018-19 terms using Gross Domestic Product (GDP) Deflators (published June 2019) to ensure comparability. The last line shows the same costs discounted at the Green Book discount rate of 3.5%.
2. The 'PFI-financed contribution from private sector' includes construction costs, other costs of the PFI company, and fees and interest on private finance during construction that were included in the PFI contract. This includes the value of the construction work completed by Carillion which was assessed as £269 million. We have assumed that costs were incurred by the PFI company in line with the PFI contract until the contract was terminated.
3. We have estimated construction overspend in Carillion and its supply chain using losses it reported in 2017 (adjusted for inflation). This is based on incomplete information about the extent of Carillion's losses. Carillion's subcontractors may also have incurred losses.
4. All construction costs exclude VAT. The Trust expects to pay £75 million VAT on completing construction and on some of the other costs it will incur. The Trust and HMRC do not currently agree on the VAT treatment.
5. Because the Trust has not re-forecast the cost of maintaining the hospital we have based this line on costs in the PFI model, adjusted for the delay to the hospital opening.
6. The 'Interest on private finance and other costs included in the PFI unitary charge' is calculated as the total unitary charge less the costs of construction (including fees and costs of the PFI company), facilities management, and maintenance costs over the 30-year contract.
7. The retail concession would have provided the PFI investors with additional income, which will now accrue to the public sector.
8. The public sector paid £42 million to the private sector lenders to terminate the contract. This is now shown in the righthand column as it is not a net increase to the cost of the project.
9. Phases 2 and 3 of the project will see the original hospital demolished and the site used to provide an underground carpark and public plaza.
10. Total losses borne by the private sector have been estimated at £324 million (adjusted for inflation) based on the information available. This assumes that the planned investment in the PFI contract was made and will not be recovered, and is net of the £42 million payment to terminate the PFI contract. This information is not complete, for example we do not know the extent of losses in the supply chain, whether there will be any amounts recovered from the liquidation of the PFI company, or the extent to which losses were reduced or passed from the original investors to other organisations via fees paid during construction or risk management activities such as insurance or securitisation.

Source: National Audit Office analysis of the PFI model and financial information from the Trust

Figure 11
The expected cost to the taxpayer of Royal Liverpool over time

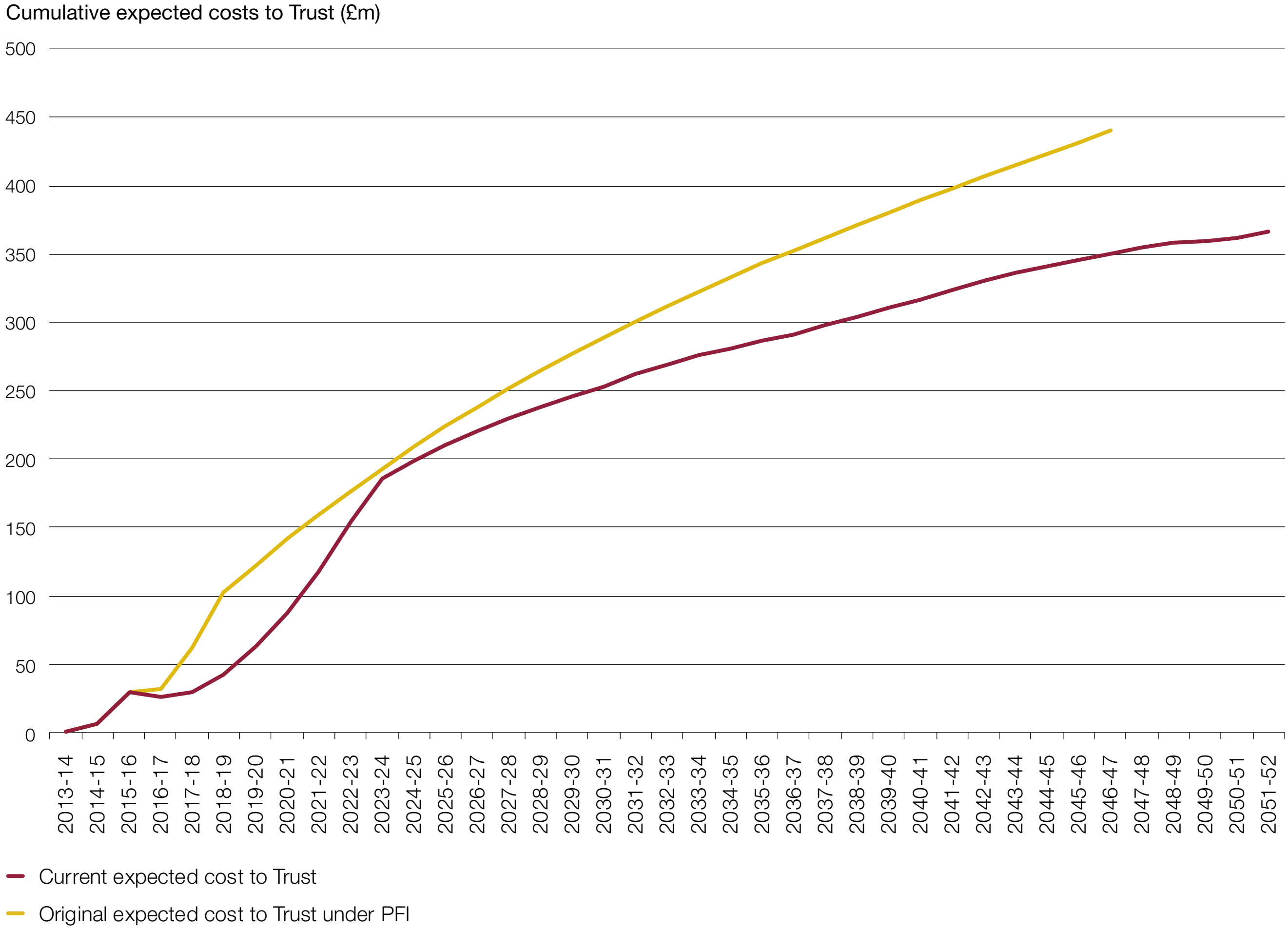
Under public funding, in real terms the expected cost to the taxpayer to build and operate Royal Liverpool has decreased by 1% to £739 million, but more of the costs will be incurred earlier



Source: National Audit Office analysis of the PFI model and financial information from the Trust

Figure 12
The expected cost to the Trust of Royal Liverpool over time

The Department of Health & Social Care and NHS England and NHS Improvement (NHSE&I) are paying for the front-loading of the project costs so the Trusts are currently expected to be financially better off overall than if the PFI contracts had gone ahead as originally planned. The Liverpool Trust is expected to pay an estimated £366 million in total, a reduction of £74 million



Notes

1 Shows cumulative costs in 2018-19 terms to the Liverpool University Hospitals NHS Foundation Trust (the Liverpool Trust) over 30 years under the original PFI arrangement and under the current forecast.

2 The forecast includes an estimate of the cash cost (in 2018-19 terms) to the Trust based on the expected accounting treatment of the original and current forecasts from Figure 10, net of funding mechanisms such as receipt of Public Dividend Capital (PDC) and including intra-government payments such as VAT and the PDC dividend. We have not modelled the impact of income generated by the hospital or changes to the value of the hospital building from revaluation or impairment as these are not yet known. The expected PDC dividend to be paid has been estimated at 3.5% of the average impact on the Trust's net assets. The results have then been converted to 2018-19 terms in the same way as in Figure 10.

Source: National Audit Office analysis of the PFI model and financial information from the Trust

Appendix One

Our investigative approach

Scope

1 We investigated government's role in the rescue of the Midland Metropolitan and the Royal Liverpool University hospitals following the liquidation of Carillion on 15 January 2018. We reviewed:

- action by the PFI companies (The Hospital Company (Sandwell) and The Hospital Company (Liverpool)) and the two NHS Trusts (Sandwell and West Birmingham Hospitals NHS Trust and Royal Liverpool and Broadgreen University Hospitals NHS Trust) to try to resurrect the PFI contracts and complete the hospitals;
- government action (by the Department of Health & Social Care, NHS Improvement, the Infrastructure and Projects Authority (IPA) in the Cabinet Office and HM Treasury) to support the two Trusts;
- government action to negotiate a settlement with the PFI companies and finance the completion of the hospitals using public funds; and
- action by the Trusts to take ownership of the hospitals and engage with new contractors to finish the hospitals.

2 The investigation is non-evaluative. We have not assessed the viability of the business cases for the two hospitals, the viability of the construction projects if Carillion had not collapsed, or the total cost or impact of the rescue of the two hospitals against other possible outcomes.

3 We have not assessed the actions of Carillion, its directors, or its advisers.

4 We relied on information available from the public sector, since the private companies involved are either in liquidation or have had their contracts terminated. We did not have access to the lenders' or the PFI companies' internal papers, except where copies of these were held by public bodies.

5 We shared copies of our draft findings with the Department of Health & Social Care, NHS England & NHS Improvement (NHSE&I), the Cabinet Office, HM Treasury and the two NHS Trusts.

Methods

6 In examining these issues, we drew on a variety of evidence sources:

- we interviewed key individuals from the Department of Health & Social Care, the IPA, NHS England & NHS Improvement (NHSE&I), HM Treasury and the two NHS Trusts, to understand the chain of events and decisions before and after Carillion's liquidation and to check our understanding of written evidence;
- we checked the accuracy of statements in the report with third parties involved in the financing and construction of the two hospitals. We were unable to interview Carillion staff as our fieldwork started after Carillion had gone into liquidation;
- we reviewed documents, including business cases, contracts and contract schedules, ministerial briefings, meeting minutes from the two Trusts, emails between the Trusts and the Departments, and professional reports; and
- we analysed published and unpublished data. This included calculations and assessments made on the value for money of different options for completing the hospitals, data and calculations supporting business cases, and data used for calculating termination agreements. We did not independently verify these data. We set out our assumptions in notes to the Figures in this report.

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