



WHEELCHAIR
ALLIANCE

AN ECONOMIC ASSESSMENT OF WHEELCHAIR PROVISION IN ENGLAND

A report commissioned by Motability and The
Wheelchair Alliance

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GLOSSARY

TABLE 1 GLOSSARY

ABBREVIATIONS	
BHTA	British Healthcare Trades Association
CCGs	Clinical Commissioning Groups
DHSC	Department for Health and Social Care
DLA	Disability Living Allowance
EHC	Education, health and social care
EU	European Union
ICS	Integrated Care Systems
KPIs	Key performance indicators
MHRA	Medicines and healthcare and products regulatory agency
MND	Motor neurone disease
NHS	National Health System
NHSE&I	National Health System England and Improvement
ONS	Office of National Statistics
PIP	Personal Independence Payment

EXECUTIVE SUMMARY

BACKGROUND AND METHODOLOGY

Wheelchairs profoundly impact the quality of life of thousands of disabled adults, children, families and carers. Wheelchairs and associated seating are fundamental to safely facilitating independent living and social inclusion, and access to education and work. NHS England has noted that NHS-commissioned wheelchair services are of a variable standard and approach.^{1,2} This variation means that in some cases users have had to purchase a wheelchair, and in other cases they have experienced long delays getting an NHS-supplied assessment and wheelchair. This will negatively impact the clinical, educational and social outcomes of users and imposes economic costs on their families and society.

Motability and The Wheelchair Alliance commissioned Frontier Economics to review the economic conditions in the provision of wheelchairs and how these conditions impact end-users. Motability's vision is that no disabled person should be disadvantaged by poor access to transport. Motability is currently broadening its remit with a particular focus on improving and expanding access to quality and affordable wheelchairs. The Wheelchair Alliance aims to transform the experience for wheelchair users in England through improved access, quality and effectiveness of services.

This report aims to provide robust evidence and data on the scale of current issues in wheelchair provision, potential beneficial interventions and highlight best practices. Some of the existing evidence on the challenges that exist in the provision of wheelchair services is either out of date or anecdotal and high level. This study provides an evidence-based articulation of current issues and quantify variation in geographic service provision. The key audience for the study is policy and health professionals. All of our work has been guided by an overarching economic framework. Specifically, the research aims to answer the following five research questions:

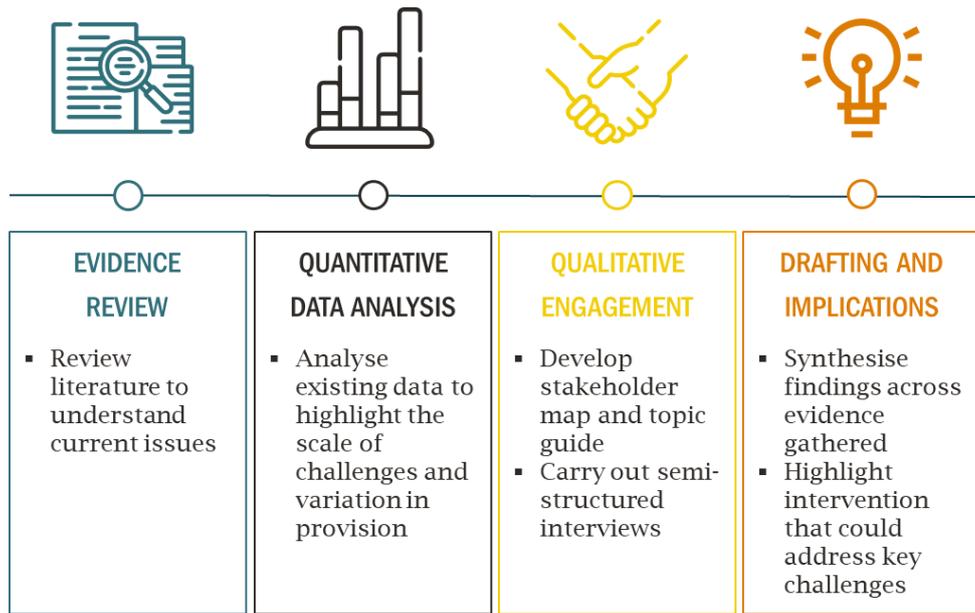
- 1 Across all forms of wheelchair procurement, what are the major economic challenges?
- 2 From a market perspective - what are the resulting impacts on end-users?
- 3 Why has innovation in the sector remained difficult to access?
- 4 What examples of best practice procurement, logistics, service design, and training exist?
- 5 Where is intervention most needed in the system to solve identified problems?

To address the research questions outlined in the previous sections, we have implemented a four-step mixed-methods approach, shown in Figure 1.

¹ <https://www.england.nhs.uk/wheelchair-services/>

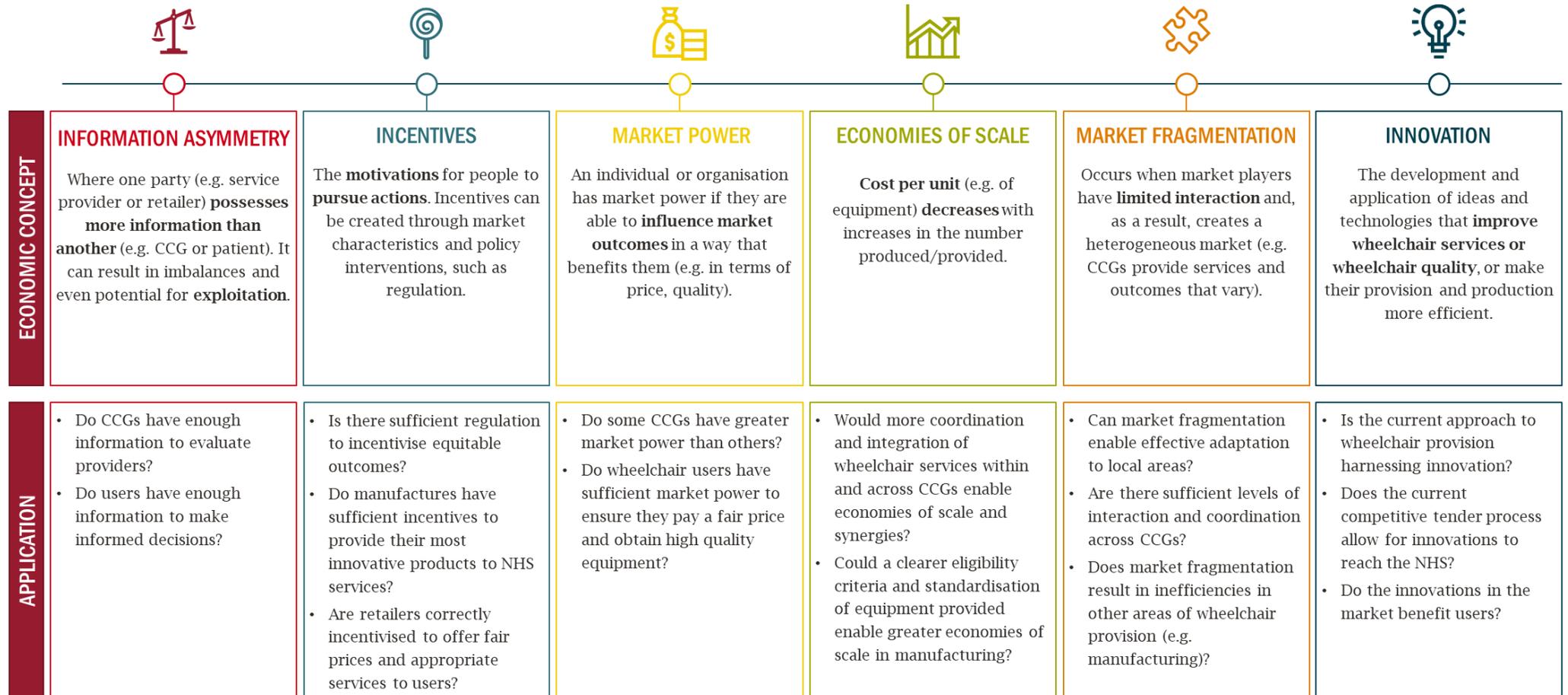
² <https://www.england.nhs.uk/publication/model-service-specification-for-wheelchair-and-posture-services/>

FIGURE 1 OVERVIEW OF ECONOMIC STUDY METHODOLOGY



A central aim of the study is to provide an evidence-based articulation of current issues and potential opportunities in wheelchair provision that is grounded in understanding underlying market failures and economic drivers. We have **structured the economic study around six identified economic concepts** that are particularly relevant to the issues and challenges in wheelchair provision. These concepts are outlined in Figure 2.

FIGURE 2 ECONOMIC CONCEPTS

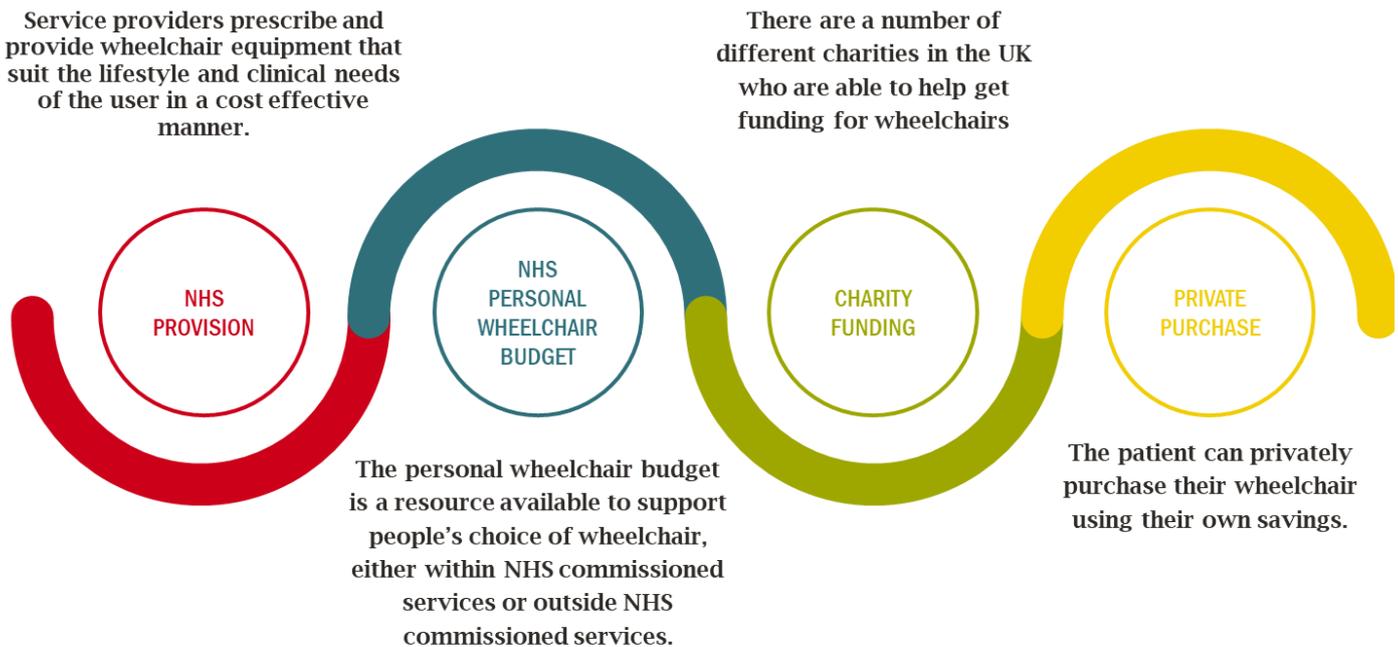


KEY FINDINGS

UNCERTAINTY IN THE NUMBER OF WHEELCHAIR USERS

A user has four different options for receiving wheelchair equipment: direct NHS provision, NHS provision through personal wheelchair budgets, charity funding, and private purchase.

FIGURE 3 COMMON ROUTES FOR USERS TO ACCESS WHEELCHAIR EQUIPMENT



In 2018-19, we estimate that there were between 688,000 and 860,000 users in England, with a central estimate of around 780,000 users.^{3,4} (or up to 1.37 million users if we consider users of powered mobility scooters). The **estimated range is very large to reflect the uncertainty** due to the lack of robust evidence to back our assumptions. There were at least 586,000 users registered for English NHS wheelchair services in Quarter 3 of 2021-22.⁵ The vast majority of these users are adults (528,000, 90%), while the remainder are children (58,000, 10%).

NHS wheelchair services vary significantly in terms of their scale. We find that there is **regional variation in the number of users registered and the need of these users**, where need relates to the number of users registered as low, medium or high need. This variation remains even when we normalise by population,

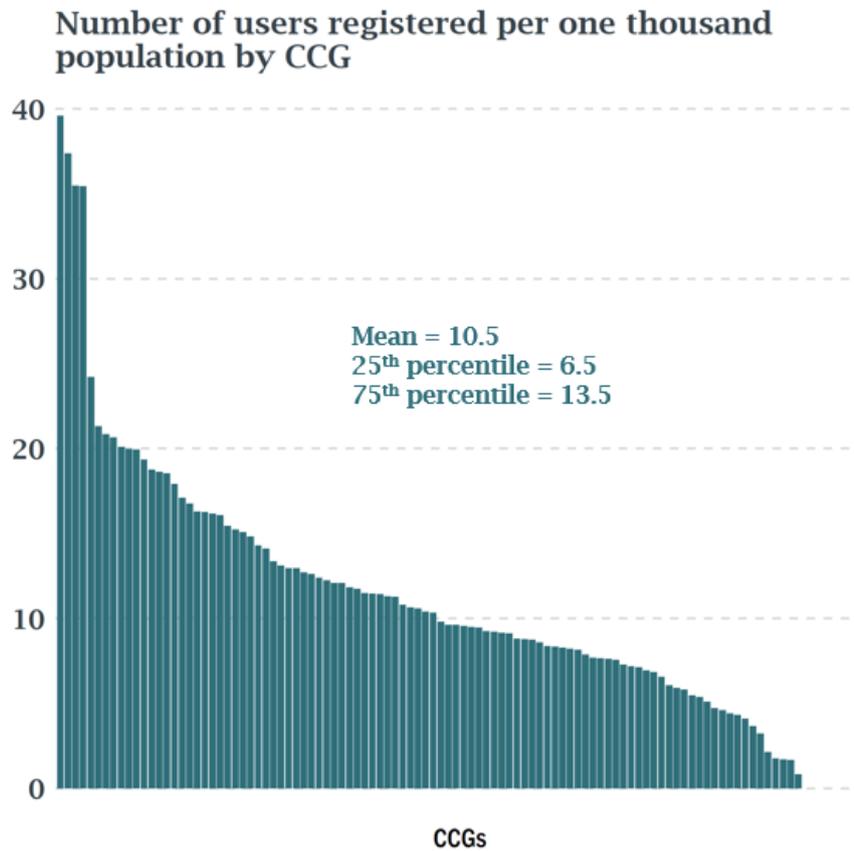
³ This range increases to 1.37 million users if we consider users of power

⁴ This analysis is based on the following data: (1) The latest wave (2018-19) of the Family Resources Survey - based on this data we estimate 5.7 million people with a mobility disability in England; (2) an analysis of 2018 National Travel Survey data on use of mobility aids by NatCen Social Research (2020). NatCen analysis shows that of all those having difficulty going out on foot unaided, 3% use a powered wheelchair, 12% use a manual wheelchair and 9% use a powered mobility scooter. These three groups of users are not mutually exclusive, because NTS respondents could select more than one answer to the question on type of mobility aid used. We do not know to what extent these three groups overlap each other.

⁵ 93% of CCGs inputted data in Q3 2021-22. Therefore we expect there to be more than 586,000 users registered with wheelchair services.

suggesting that some services are ‘over-subscribed’ in comparison to others, particularly those in the North of England. Figure 4 shows the substantial variation in the number of users registered to NHS wheelchair services by CCG per one thousand population.

FIGURE 4 NUMBER OF USERS REGISTERED TO NHS WHEELCHAIR PER ONE THOUSAND OF POPULATION SERVICES BY CCG



Source: Frontier Economics analysis of the National Wheelchair dataset

The data for assessing the size of the retail sector (encompassing private purchases and some of those funded from NHS Personal Wheelchair budgets) and charity sector provision is limited. We find some **tentative quantitative evidence that points to the growth of the retail sector**. We find **annual turnover has seen a 69% real increase from 2012 to 2021** for the Retail sale of medical and orthopaedic goods in specialised stores, from £637m to £1,076m (see Figure 5).⁶ This is consistent with our qualitative engagement, which found that charitable and private retail provision of wheelchairs were increasing due to perceived gaps in NHS provision.

⁶ This retail category is broad and includes more than wheelchairs. This category of retail products is based on the 2007 revision of the Standard Industrial Classification (UK SIC 2007). The UK SIC 2007 is a major revision of UK SIC 2003 which changes at all levels of the SIC. This is the most granular category, and there is not a SIC code that relates to wheelchairs specifically.

FIGURE 5 TOTAL ANNUAL TURNOVER FOR RETAIL SALE OF MEDICAL AND ORTHOPAEDIC GOODS



Source: Frontier Economics analysis of ONS data

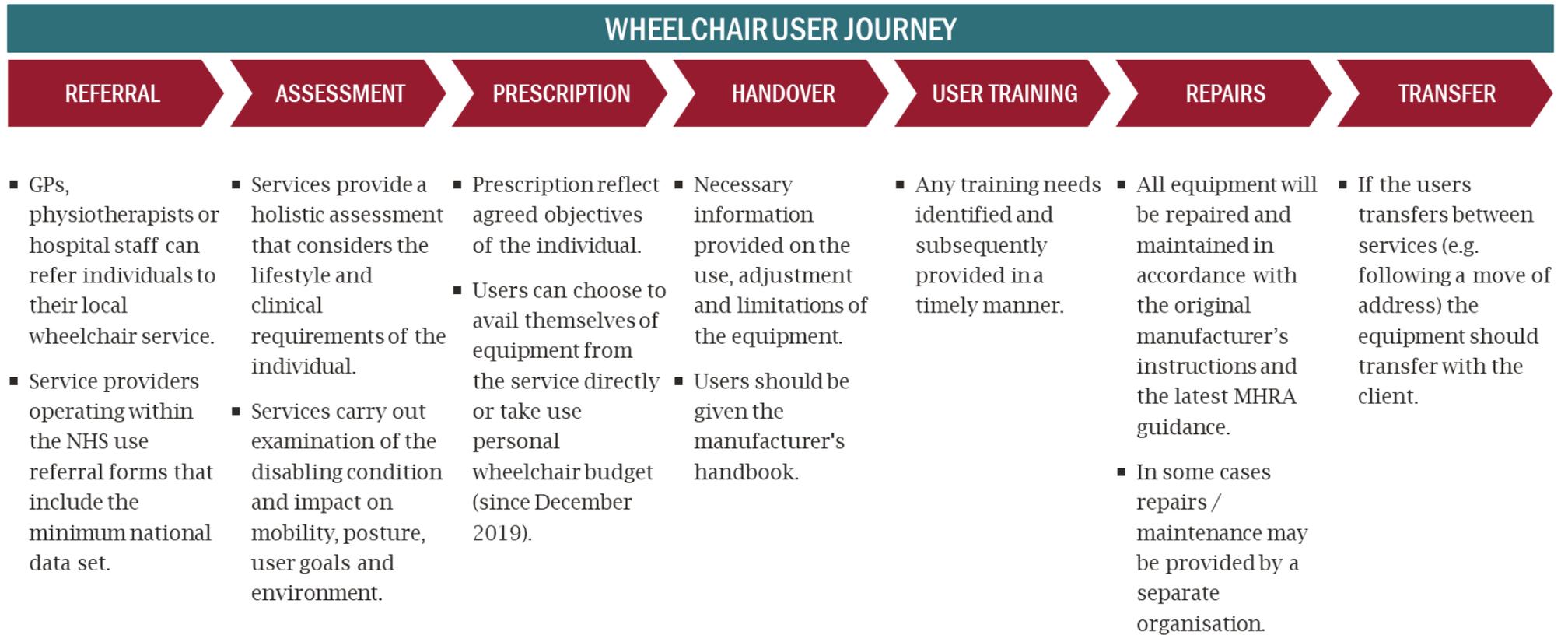
Note: All data shown in 2021 prices

INCONSISTENT USER EXPERIENCE

There are multiple stages of service provision along the wheelchair user journey, from referral to receiving equipment and any repairs or service transfers. These stages of provision are outlined in the figure below.

We find that wheelchair services play a **vital role in many aspects of people's lives**. NHS and wider provision allow individuals with mobility needs to have increased independence. Our report finds **clear concerns among stakeholders over service quality, equity and user fairness**. In terms of service quality, we found evidence of significant delays in receiving timely intervention and wheelchair equipment. Our quantitative analysis found significant variation across CCGs in meeting the 18 week waiting times standard. Some services achieved this target in the third quarter of 2021-22 for all their new and re-referred high need users, while others met those timescales for less than 25% of their high need users. We found examples of where **users are left without adequate equipment, leading to self-funding of permanent or temporary equipment**. We also found examples of users being unaware of how and where to access services. Further, users are unsure of where to report feedback and wider concerns with wheelchair provision. Together, these impacts can have significant implications for users of wheelchairs and their carers, leading to a reduction in independence and reduced quality of life.

FIGURE 6 STAGES OF WHEELCHAIR PROVISION



Source: Frontier Economics based on the Operating Model for NHS Commissioned Wheelchair Services and the Model Service Specification for Wheelchair and Posture Services

Note: Medicines and Healthcare Regulatory Agency (MHRA)

For many users, in particularly those with progressive conditions, this journey will not be linear i.e., there will be periods of reassessment and new equipment issued.

FINDINGS RELATED TO THE ECONOMIC CONCEPTS

We have summarised the rest of the findings of this report linked to the key economic concepts in the tables below. We note that there are links between the findings for each economic concept and some findings are relevant to more than one economic concept.

TABLE 2 KEY FINDINGS - CURRENT APPROACH TO WHEELCHAIR PROVISION

ECONOMIC CONCEPT	MAIN FINDINGS
 Incentives	<ul style="list-style-type: none"> ■ The specific model of wheelchair provision adopted by CCGs has implications for the incentives created. Key variations in the models adopted include the level of private sector involvement, the payment model and whether wheelchair services are combined with other services. For example, a block contract model of provision is expected to create greater cost certainty but reduce the incentives to adopt a flexible user-centric model.
 Economies of scale	<ul style="list-style-type: none"> ■ Economies of scale are generally limited in NHS wheelchair provision due to each local area developing their own unique wheelchair service independently from one another. This has the potential to reduce procurement efficiency as well as sharing of best practice. ■ We found wheelchair networks, such as regional networks and the National Wheelchair Managers Forum,⁷ are effective mechanisms for harnessing collaboration across CCGs and driving shared learnings. ■ A clear theme across the evidence collected is the lack of a central body for wheelchair services and the corresponding lack of integration across CCGs. Individual CCGs are able to create a wheelchair service with unique characteristics. This allows for services to be tailored to the local context, which can lead to beneficial outcomes. However, wheelchair services are seen to be a “<i>post-code lottery</i>”, with varying quality of access and outcomes across services. Also, in our quantitative analysis, we found significant variation across CCGs in meeting waiting times standards and annual expenditure per user registered.
 Market fragmentation	<ul style="list-style-type: none"> ■ We found that issues of local fragmentation, particularly related to a lack of clear accountability, have prevented the development of joined-up local services within a local area. This has led to gaps in the services provided, such as for

⁷ The National Wheelchair Managers Forum involves service managers.

children's wheelchairs that provide educational benefits, due to fragmentation between local authorities and the wheelchair services.



Innovation

- There are examples of innovative practices with commissioners and providers **pooling funding with local services**, such as education, social care and housing services. By pooling funding across services, users were able to access equipment that they would have otherwise been unable to access. This was found to have the potential to increase the quality of user's experiences by creating a more holistic service offering. We found a number of barriers to the development of pooled funded models, such as the increased constraints on the workforce and information gaps. Our engagement found that the workforce in some areas had gone above and beyond in order to implement innovative practices.

TABLE 3 KEY FINDINGS - MARKET FUNCTIONING

ECONOMIC CONCEPT	MAIN FINDINGS
 Asymmetric information	<ul style="list-style-type: none"> ■ The fragmentation of services across CCGs has led to limited transparency about costs paid for equipment and other aspects of wheelchair services across CCGs. We were told that this could result in significant market power for wheelchair manufacturers and limit the ability of CCGs to accurately assess tender processes, particularly for service provision. ■ A number of stakeholders highlighted that wheelchair users are not always in a position to determine whether they have received a sufficiently high-quality service. This creates the potential for users to be exploited, particularly when opting to self-fund equipment in the private sector or using a grant from a charity provider.
 Incentives	<ul style="list-style-type: none"> ■ The gaps in the services offered by the NHS have incentivised the growth of alternative private or charitable sector sources for wheelchair equipment. NHS provision of wheelchair services is seen to have critical gaps (e.g., for powered wheelchairs and high-performance wheelchairs), resulting in unmet demand. As a result, wheelchair users have been incentivised to source equipment outside of NHS provision, such as through charitable funding or self-funding. As a result, we find evidence to suggest the increased role of the retail sector in the provision of wheelchairs. ■ Stakeholders highlighted gaps in the current regulation of wheelchair services: they suggested improvements to the reporting process of equipment faults to the Medicines and Healthcare products Regulatory Agency (MHRA), some stakeholders suggested a need for more rigorous mandated regulation through the Care Quality Commission (CQC) that covers private sector providers, additional regulation for retailers to prevent potential user exploitation, and an independent complaints body where users are able to concerns with services. Other stakeholders noted that any regulation of NHS services would first need to recognise the different ways in which services are set up and managed before taking any action. We have outlined our recommendations for regulatory changes for wheelchair provision in the following section.
 Market power	<ul style="list-style-type: none"> ■ Stakeholders suggest that the manufacturing of wheelchairs is dominated by a small number of firms, with some smaller manufacturers providing more niche specialised equipment. We do not find evidence of manufacturers exploiting their position. However, this may be due to limited evidence available. ■ We do find evidence of users paying a higher unit price for equipment when obtaining in the private retail sector compared to the unit price paid by the NHS. The NHS unit price includes only the equipment. If an individual receives services directly from a private provider they will be charged for the equipment and assessment. The assessment costs are

not factored into NHS unit prices.⁸ We also find **potential for certain individuals, particularly those with high needs, to be exploited**, particularly when obtaining wheelchair equipment privately through the retail sector.



Innovation

- We found **mixed evidence on the extent that innovation occurs in wheelchair provision** and the extent that innovation ultimately results in improvements to the experiences of wheelchair users. We found multiple examples of product innovation (new types of equipment being manufactured that would improve user experiences). Stakeholders suggested that the **levels of funding available for NHS wheelchair services are insufficient to encourage innovation** in terms of the services adopted and the equipment administered. We also found a lack of innovation for particular types of equipment, such as children's wheelchairs.

⁸ We note that the assessment expertise and training of clinicians is not account for in NHS costings.

TABLE 4 KEY FINDINGS – USER IMPACT

ECONOMIC CONCEPT	MAIN FINDINGS
 Asymmetric information	<ul style="list-style-type: none"> We found limitations to the assessment process resulting in information gaps between: (i) users and carers with providers of services and (ii) different service providers (e.g., GPs, therapists and equipment providers). As a result, equipment provided to users may not be sufficiently tailored to their experience and wider caring constraints.
 Incentives	<ul style="list-style-type: none"> Stakeholders identified a number of critical gaps in services received by users. These gaps, alongside questions of service quality and waiting times, have incentivised users to self-fund permanent or temporary equipment. The self-funding of equipment was found to have wider consequences for users and carers, such as increased financial constraints on households. Users highlighted communication issues during the initial process of providing an individual with equipment. These included users not receiving an explanation on the rationale behind the provision of certain equipment over other types of equipment. We found a lack of communication channels for users to influence the approaches to wheelchair provision (such as a feedback mechanism for users to highlight concerns with providers of services or CCGs).
 Market power	<ul style="list-style-type: none"> Multiple stakeholders interviewed highlighted inconsistencies in wheelchair services across the country, including access to assessment and equipment. These were identified to be both across CCGs and within CCGs. Users suggested that within CCGs, it is <i>“those who shout the loudest, get the care.”</i> This suggests varying levels of influence across users. This is corroborated by our quantitative analysis, where we found substantial variation in expenditure per user registered with NHS wheelchair services.

TABLE 5 KEY FINDINGS - IMPACT OF POLICY AND WIDER FACTORS

ECONOMIC CONCEPT	MAIN FINDINGS
 <p data-bbox="244 496 416 560">Asymmetric information</p>	<ul style="list-style-type: none"> <li data-bbox="450 352 2107 544">■ The National Wheelchair Tariff was designed to help improve the commissioning and provision of wheelchair services through improvement in information sharing.⁹ Stakeholders suggested a mixed impact of the National Wheelchair Tariff in improving cost transparency of services. Commissioners use the Wheelchair Tariff to estimate and benchmark the value of services. However, providers of care suggested a more nuanced view is required in categorising user needs, and existing tariff categories may not be an accurate reflection of the complexity of services provided to a user. <li data-bbox="450 560 2107 703">■ This National Wheelchair Dataset was designed to improve transparency and benchmarking. It provides regular information at the CCG level on a range of indicators. It has enabled services to compare against each other for the available metrics, resulting in follow-on discussions about key drivers of service quality. However, the data set has inconsistencies that limit comparability and are not always reflective of the on-ground experience.
 <p data-bbox="244 815 389 842">Incentives</p>	<ul style="list-style-type: none"> <li data-bbox="450 740 2107 922">■ The Model Service Specification describes the role, function and responsibilities of commissioners and providers of NHS wheelchair services. However, the non-mandatory nature of the specification may limit its impact. Many of the recommendations have not been consistently translated into practice across wheelchair services in England. It is possible that significant tailoring of the guidance in different local areas can result in a reduction of potential benefits from consistency and standardisation.
 <p data-bbox="244 1050 344 1118">Market power</p>	<ul style="list-style-type: none"> <li data-bbox="450 954 2107 1214">■ Personal Wheelchair Budgets aim to increase user influence in wheelchair provision. Personal Wheelchair Budgets have not been implemented throughout all NHSE&I wheelchair services. Our quantitative analysis finds that 21% of CCGs have not yet transitioned to Personal Wheelchair Budgets in Q3 2021-22. We find that Personal Wheelchair Budgets have increased mechanisms for creating user choice and have created more flexibility for providers. However, the funding available in Personal Wheelchair Budgets has limited their impact. Users identified gaps in the funding of Personal Wheelchair Budgets, as they do not cover additional costs like shipping, or repair and maintenance, resulting in a need for users to self-fund elements of care.

⁹ The NHS payment system for secondary healthcare is called the National Tariff. The tariff is a set of rules, prices and guidance that governs the payments made by commissioners to secondary healthcare providers for the provision of NHS services. More information on tariffs is available here: <https://www.england.nhs.uk/pay-syst/>

**Innovation**

- There are examples of **innovative practices in providing care as a result of policy initiatives**. For example, **outcome-based measures** are tools that help services to collect information on users' goals and assess the extent they have been met, helping service providers to close their knowledge gap on users' priorities and satisfaction. However, we found that **many services have not adopted outcome-based measures** due to the **additional workforce pressure** that would be created on the already stretched workforce.

RECOMMENDATIONS & OPPORTUNITIES

We have drawn together all the evidence gathered, to highlight interventions and recommendations that could be adopted in order to address the challenges in wheelchair provision. Our research finds that there are clear opportunities for beneficial change and empowerment of users, which we have grouped into four areas: additional support for wheelchair services, regulation, the role of charities and social enterprises and data and information.

ADDITIONAL SUPPORT FOR NHS WHEELCHAIR SERVICES

- If **NHSE&I played a more active role** in ensuring that all CCGs prioritise wheelchair services and dedicate sufficient resources to them, the outcomes for some wheelchair users may be improved. Mandating the adoption of the Model Service Specification or requiring more standardisation of eligibility criteria may help to achieve this.
- NHSE&I could add further value by helping local areas **fill existing skill gaps** that we have identified in both commissioning and delivery of wheelchair services through training of specialists. These gaps were noted in particularly for engineers, therapists and clinicians, where specialist skills are required in order to carry out effective assessments. This could partially be achieved via sharing of high quality and innovative practices which exist in certain parts of the country but are not universally known or implemented.
- **Improvements in communication** and the flow of information between stakeholders are also required. This could help to empower users and reduce information asymmetries that we have identified. These improved information flows could be achieved via further mandating the adoption of outcome-based measures and requiring all commissioning of NHS wheelchair services to adequately reflect user experiences. This last point can empower users to create the type of service they want in each local area and influence national services. Any information that is shared between stakeholders (e.g., between wheelchair services and users) needs to be done so in an accessible and transparent format that contributes to improved understanding and awareness.
- Future work could compare the current model for wheelchair provision with other types of provision (e.g., hearing aids, optical services) to determine whether any improvements in process can be identified or best practice in terms of information sharing could be adopted in this context.
- Finally, if NHSE&I sought to increase **integration across services** (e.g. with social care, local housing and education) , economies of scale could be unlocked, and innovation could be facilitated. This type of integration could mean that unwarranted variation in the quality of provision is reduced, and best practice approaches are more widely adopted (e.g., pooled budgets). However, the precise role played by NHSE&I in this context does require careful consideration as there are clear benefits associated with each local service having the flexibility to adapt to the needs of their own population.
- These additional forms of support will help to ensure that users receive a more consistent standard of wheelchair service provision in different parts of the country and have more opportunities to shape those services.

REGULATION

- All NHS services (both those provided by NHS organisations and those tendered out) need to be subject to a consistent and appropriate level of regulation. For example, a more rigorous mandated regulation of all services could be carried out in the future by an organisation like the Care Quality

Commission (CQC).¹⁰ Currently, the CQC remit does not extend to in-depth reviewees of tendered out services. Separately additional regulation for retailers to prevent potential user exploitation would be beneficial, and an independent complaints body where users are able to voice concerns with services would add value.

- Addressing the current inconsistent and fragmented regulatory landscape in this context will mean that outcomes for users improve as forms of provision are held to account effectively.

ROLE OF CHARITIES AND SOCIAL ENTERPRISES

- Charities have a crucial role to play in enabling individuals to access appropriate equipment and supporting users more generally. Currently, the charity market is **somewhat fragmented, and multiple charities have remits that are partially overlapping**. It may be possible to generate a larger positive return on charitable funds if there was some pooling of resources.
- We found that examples of where users are left without adequate equipment, leading to self-funding of permanent or temporary equipment, and examples of users being unaware of how and where to access services. **Charities could assist by providing users with advice in order to increase users understanding and ability to access wheelchair services.**
- Leveraging all charitable funding in the most impactful way possible will mean that wheelchair users and their families will have a broader range of viable options to pursue.

DATA AND INFORMATION

We have also identified a number of **information gaps** and areas for further research which could provide additional insights into the current scale of challenges in the provision of wheelchair services in England. These insights may help to further refine potential interventions and empower users to make more informed choices, by reducing informational asymmetries and clarifying expectations regarding standards of provision.

- We recommend that **further work be undertaken to estimate the scale of demand for wheelchair services, and their provision**. This will help inform the configuration of services and identify individuals who are currently not receiving adequate support.
- In addition, currently it is difficult to comprehensively determine the size and composition of the retail sector. Further work could aim to fill this gap. The total volume of users who opt to engage with the private retail market due to deficiencies in NHS provision is also currently not well understood.
- We recommend that further work is undertaken to **understand the levels of competition** in the provision of wheelchair services. We have not been able to determine the number of competitors involved in each tender process and how this varies across regions as part of our economic study. Addressing this could serve as a useful next step in developing an understanding of the market functioning of wheelchair services.
- We found **limitations to the completeness of the National Wheelchair Dataset and inconsistencies in definitions** that limit the comparison of the data across CCGs. For example, local areas may be calculating waiting times in different ways or using inconsistent definitions regarding patient need. As a result, there is potential for a revised analysis of the National Wheelchair data set once greater completeness and consistency in data collection are achieved.

¹⁰ To be successful any regulation of NHS services would firstly need to recognise the different ways in which services are set up and managed before taking any action.

1 INTRODUCTION

1.1 BACKGROUND

Wheelchairs profoundly impact the quality of life of thousands of disabled adults, children, families and carers. Wheelchairs are fundamental to independent living and can facilitate social inclusion as well as access to education and work.

NHS-commissioned wheelchair services are not of a universally high standard. In 2014, NHS England acknowledged that *“too often wheelchair users find that their social, professional and leisure activities are not enhanced, but instead limited by the sub-optimal chairs that are supplied.”*¹¹ NHS England has also previously highlighted unwarranted geographic variation in provision. In particular, it was noted that in many parts of the country, wheelchair services are very good, but some services commissioned by the NHS *“fall short of meeting the needs of wheelchair users”*.¹²

Individuals are not supplied with incorrect equipment knowingly. However, the variation seen across wheelchair services means that, in some cases, users chose to self-fund their wheelchair, or have experienced long delays before getting access to an NHS-supplied wheelchair. This will negatively impact the clinical, educational and social outcomes of users (and the well-being of their carers). It will also impose economic costs on families and society, as some wheelchair users who are only able to access NHS issued equipment may be unable to work or attend suitable education or training activities.¹³

Since 2014, NHS England has implemented a number of initiatives in order to commission more effective, higher-quality wheelchair services. The specific initiatives include the following.

- **Establishing a national wheelchair dataset about expenditure on and access to wheelchair services.** This dataset was designed to improve transparency and benchmarking and provides regular information at the CCG level on a range of indicators.¹⁴
- **Developing a national wheelchair tariff.** This currency model was designed to help improve commissioning and provision of wheelchair services. It provides information on what is included in each currency. This included defining different categories of need (low, medium, high) to help classify different complexities of wheelchair services.
- **Publishing a model wheelchair specification to tackle the issue of variation in quality of services.** The specification outlines the provision of standard and specialised wheelchair and posture services. It describes the role, function and responsibilities of these services. The specification also acknowledges that CCGs need to be able to commission services that meet the needs of their own local population.
- **Introducing personal wheelchair budgets as a resource available to increase people’s choice and control of wheelchair provision,** either within NHS commissioned services or outside of NHS

¹¹ <https://www.england.nhs.uk/wheelchair-services/>

¹² <https://www.england.nhs.uk/publication/model-service-specification-for-wheelchair-and-posture-services/>

¹³ <https://www.england.nhs.uk/wheelchair-services/>

¹⁴ Indicators include the number of users registered with each wheelchair service, the number of users registered with each wheelchair services, the number of new referrals within the period in question, each CCG’s success in meeting waiting times targets for equipment handover; and current spending by each CCG on their wheelchair service. This data is analysed as part of our market study.

commissioned services. Since April 2017, all CCGs have been expected to start developing plans to offer personal wheelchair budgets to replace the wheelchair voucher system.

Given that a significant amount of time has now passed since these policy developments, it is appropriate to review current wheelchair provision in England and assess whether further interventions are necessary in order to provide a universally high-quality offering for wheelchair users and their families.¹⁵

1.2 ECONOMIC STUDY OBJECTIVES

Motability is a national disability charity that oversees the Motability Scheme¹⁶ and is currently broadening its remit with a particular focus on improving and expanding access to quality and affordable wheelchairs. The Wheelchair Alliance¹⁷ was created in 2015; its vision is to transform the experience for wheelchair users in England through improved access, quality and effectiveness of services.

Motability and The Wheelchair Alliance commissioned Frontier Economics to conduct a study into the provision of wheelchairs in England and how current conditions impact end-users.¹⁸ Throughout this study, we refer to overall wheelchair provision in England as a 'market'. However, it is not a market in a traditional economic sense. Firstly, the provision of wheelchairs and associated services involves multiple distinct stages from the manufacturing of equipment, procurement, provision and maintenance. These activities are interrelated but do not necessarily take place in the same economic market. All these activities were in scope for our study. Secondly, consumer-facing wheelchair provision is not a traditional market. It includes wheelchair provision which is funded directly by taxpayers and commissioned by the NHS, as well as private sector retail provision and charitable activity. Further wheelchair provision involves expert clinical assessment and varying user needs.

This report aims to provide robust evidence and data on the scale of current issues in wheelchair provision, potential beneficial interventions and highlight best practice. Some of the existing evidence on the challenges that exist in the provision of wheelchair services is either out of date or anecdotal and high level. This study aims to provide an evidence-based articulation of current issues as well as quantifying variation in geographic service provision. All our work has been guided by an overarching economic framework which we have outlined in Section 2. Specifically, the research aims to answer the following five research questions:

- 1 Across all forms of wheelchair procurement, what are the major economic challenges?
- 2 From a market perspective – what are the resulting impacts on end-users?
- 3 Why has innovation in the sector remained difficult to access?
- 4 What examples of best practice procurement, logistics, service design, and training exist?

¹⁵ We note that there is work in the reference wheelchair specification, the characteristics, prevalence, and use of wheelchair mobility aids' and whether there will be a need for associated changes in the future to accessibility standards for the design of rail, bus, taxi/private hire vehicles and transport infrastructure. This report was commissioned by the Department for Transport and the work was undertaken by Atkins-Jacobs Joint Venture (AJJV). The report is available here:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1060816/reference-wheelchair-report.pdf

¹⁶ Through the Scheme, disabled people receiving particular mobility benefits from the UK Government can exchange those benefits for a lease on a vehicle, powered scooter or powered wheelchair. The charity also provides grants to individuals for adaptations to their vehicle so that it best meets their specific mobility needs. <https://www.motability.co.uk/>

¹⁷ <https://www.disabilityrightsuk.org/news/2015/july/wheelchair-leadership-alliance-launch-10-point-charter>

5 Where is intervention most needed in the system to solve identified problems?

The next section outlines the method used for the economic study, the framework adopted and the structure of the report.

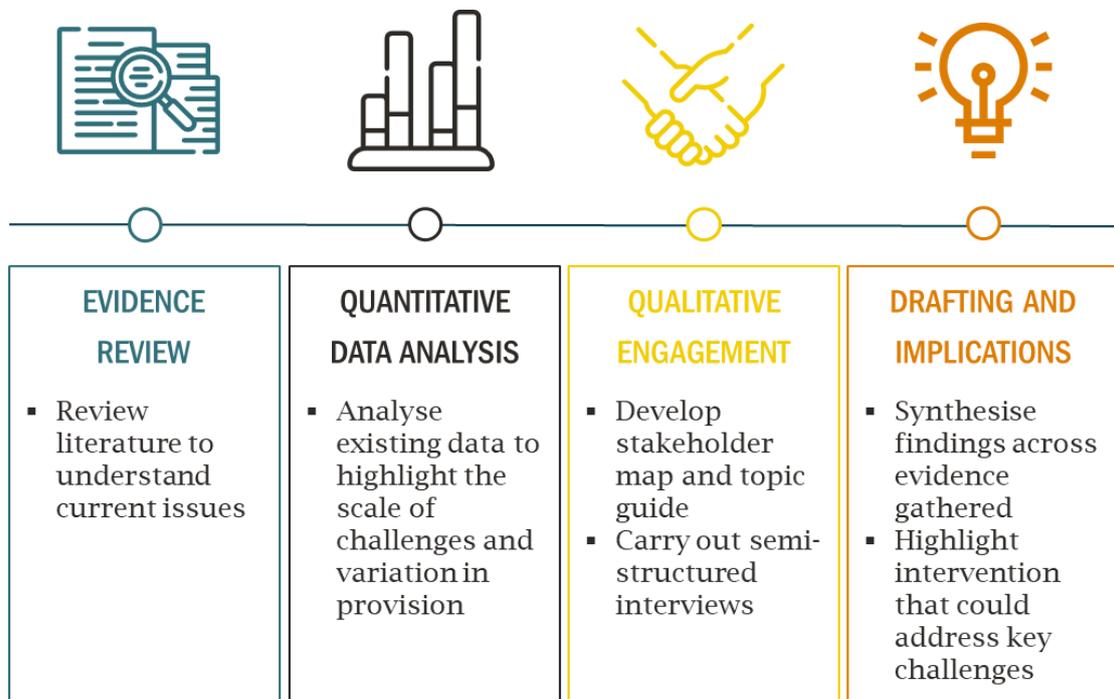
2 ECONOMIC STUDY FRAMEWORK

2.1 METHODOLOGY

To address the research questions outlined in the previous sections, we have implemented a four-step mixed-methods methodology, shown in Figure 7. We have described each step of the methodology in more detail below.

The methods included in our work are an evidence review, quantitative analysis and qualitative engagement. Throughout our work, we have triangulated the research methods we have used. For example, our findings from the evidence review and quantitative analysis informed the hypotheses explored in the qualitative engagement; our qualitative engagement uncovered additional areas to explore as part of the quantitative analysis, and our interpretation of the data analysis uses the insights from the qualitative engagement. By synthesising multiple types of analysis, we can develop more robust evidence on the scale of current issues in wheelchair provision and the potentially beneficial interventions.

FIGURE 7 OVERVIEW OF ECONOMIC STUDY METHODOLOGY



2.1.1 STEP 1: EVIDENCE REVIEW

The review of existing literature was conducted through the three steps.

Our evidence review focused on understanding the following **research questions**:

- 1 What does the literature suggest are the biggest challenges and issues in the market for the provision of wheelchair services in England?
- 2 What are the key proposed solutions?
- 3 What are the main examples of best practices?

We firstly defined a **search strategy** that allows for the identification of evidence in a structured way. Evidence was identified in multiple ways. Firstly, we identified a range of documents that we used as a starting point. We then used targeted keyword Google searches (standard and scholar) to identify additional relevant articles, papers and reports. We also extracted additional relevant articles from the bibliography of this first round of documents.¹⁹

The identified evidence was then subject to **review**. First, all identified sources were subject to a high-level review. Following this, each source was ranked based on the relevance of the document to the research questions. Based on this ranking, priority articles were identified and reviewed in greater depth. This in-depth review involved summarising information from each source relevant to each research question and synthesising key themes which consistently emerged.

2.1.2 STEP 2: QUANTITATIVE DATA ANALYSIS

The quantitative descriptive analysis provides evidence on the scale of and evolution of current issues in wheelchair provision. In this case, descriptive analysis refers to our focus on summarising and interpreting existing data rather than on forecasting future data points or carrying out detailed econometrics analysis, which would not add significant value given the information available. Specifically, the descriptive analysis assesses the following questions:

- 1 To what extent do the characteristics and performance of NHS wheelchair services vary across the country?
- 2 To what extent has the scale of provision changed over time, and the quality of provision has been improved?
- 3 What are the key drivers of performance?

The analysis draws together a range of different datasets. We conducted a granular analysis of the National Wheelchair data in order to examine adherence to updated policy guidelines and variation in both investment and service quality (e.g., delays/complaints) across the country.²⁰ We explored variation both over time (from 2015-16 to 2021-22) and across the country by comparing CCGs. This type of detailed analysis has not yet been publicly applied to this dataset.

Secondly, we augmented this dataset with other local area information (such as data on deprivation²¹, population demographics²², and CCG mergers). This allowed us to explore potential local drivers of demand and service characteristics.

¹⁹ It is important to note that most of the papers reviewed were published before 2015. In 2015/16 NHS England committed to support CCGs in improving wheelchair services through three specific initiatives: (i) establishing a national dataset; (ii) developing a national tariff; and (iii) supporting commissioners. We have not found any impact evaluation of the changes implemented by NHS England since 2015/16, therefore some of the issues identified in this review might be outdated and might have already been addressed. However, as part of this study we have corroborated the findings of the evidence review with the other research methods adopted (the quantitative descriptive analysis and qualitative engagement).

²⁰ The National Wheelchair data is available here: <https://www.england.nhs.uk/statistics/statistical-work-areas/national-wheelchair/publication-files/>

²¹ www.gov.uk/government/statistics/english-indices-of-deprivation-2019

²² <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/bulletins/annualsmallareapopulationestimates/mid2016>

To proxy for the size of the private retail market, we analysed ONS data²³ on the total UK turnover of businesses over the period 2012 to 2021.²⁴ We specifically focused on annual turnover figures for firms classified under the category of 'Retail sale of medical and orthopaedic goods in specialised stores'.²⁵ This category will include wheelchairs but will also include other types of assistive technology equipment. Therefore, while the results from this analysis can be helpful to illustrate headline trends over time, the precise magnitude of sales should be interpreted with caution.

To quantify potential unmet needs across England, we also drew on previously published analysis and other household survey data to estimate the number of wheelchair users nationally. This analysis is based on 2018 data (i.e., the latest wave of data) from the National Travel Survey²⁶ and the 2018-19 wave (i.e., the latest data published) of the Family Resources Survey²⁷, which explores the prevalence of mobility disabilities.

Finally, we received data from the Motor Neurone Disease Association on the variation of NHS service models employed in different areas of the country.²⁸ We have also analysed this information and included findings in the following sections of this report.

2.1.3 STEP 3: QUALITATIVE ENGAGEMENT

We built on the outputs from our evidence review and preliminary data analysis to develop a set of questions we wanted to explore further with stakeholders in relation to the economic functioning of the market. These topics were tested in detail from a range of different perspectives in our qualitative engagement.

The qualitative engagement aimed to provide evidence for the following research questions:

- 1 Across all forms of wheelchair procurement, what are the major economic challenges?
- 2 From a market perspective, what are the resulting impacts on wheelchair users?
- 3 Why has innovation in the sector remained difficult to access?

The qualitative engagement involved a series of semi-structured interviews and focus groups across a wide range of stakeholders (see Figure 8). In total, we interviewed 16 individuals and conducted three focus groups, with each focus group involving 5-12 wheelchair users.

²³<https://www.ons.gov.uk/file?uri=/businessindustryandtrade/business/activitysizeandlocation/adhocs/14235pharmaceuticalmedicallcosmeticrotailtimeseries/ah998.xls>

²⁴ Please note this will not include data from businesses outside the UK.

²⁵ This class of the UK Standard Industrial Classification (2007) includes the following subclasses of products:

- Invalid carriages with or without motor (retail)
- Medical goods (retail)
- Orthopaedic appliances (retail)
- Surgical appliances (retail)

<https://webarchive.nationalarchives.gov.uk/ukgwa/20160105230903/http://www.ons.gov.uk/ons/guide-method/classifications/current-standard-classifications/standard-industrial-classification/index.html>

²⁶ <https://www.gov.uk/government/collections/national-travel-survey-statistics>

²⁷ <https://www.gov.uk/government/statistics/family-resources-survey-financial-year-201819>

²⁸ Please note this data was circulated directly to Frontier Economics and is not readily publicly available.

The interviews were structured around detailed topic guides, which ensured that key issues identified in advance would be covered, and that stakeholders could provide input on other areas that they felt were relevant.

For ease of presentation, stakeholders are classified into three overarching groups, commissioners of NHS services, providers and users. In reality, there is substantial diversity within each group. Providers include in-house providers of NHS services, privately run NHS service providers, manufacturers, private retailers, charities and social care providers.

FIGURE 8 QUALITATIVE ENGAGEMENT STAKEHOLDERS



We divided the engagement across two waves which allowed time for reflection on emerging findings and re-prioritisation of the areas to discuss with stakeholders. As a result, different topics are explored across the two waves. The topics explored in each stage of the qualitative engagement are outlined in Table 6.

The full topic guide used for the qualitative engagement is provided in Annex C - . In practice, the areas discussed with each interviewee were adjusted to reflect their areas of expertise and interview discussions. This means that not all question areas were asked to each interviewee.

TABLE 6 TOPICS EXPLORED IN THE QUALITATIVE ENGAGEMENT

WAVE ONE TOPICS	
TOPIC	EXAMPLE QUESTIONS EXPLORED
1 Current approach	<ul style="list-style-type: none"> ▪ What are the NHS commissioning models used? ▪ What are the current levels of integration and collaboration across services? ▪ What are the characteristics of the relationships between key stakeholders? ▪ What role is played by the private retail sector and charitable sector currently?
2 Market functioning	<ul style="list-style-type: none"> ▪ How effective is competition at different stages of the market? ▪ Is innovation incentivised and adopted? ▪ Are there any gaps between individual requirements and market supply? ▪ What are the root causes of identified issues?
3 Impact on users	<ul style="list-style-type: none"> ▪ What are the resulting impacts of the current approach on users?

		<ul style="list-style-type: none"> Do users of the service receive universally high-quality care?
4	Impact on policy and wider factors	<ul style="list-style-type: none"> What has been the key impact of previous policy changes? Have wider factors such as Covid-19 and Brexit impacted provision?
5	Opportunities to improve	<ul style="list-style-type: none"> What are the key areas for improvement? What are the key recommendations to improve wheelchair provision?

WAVE TWO TOPICS

CASE STUDY TOPIC	EXAMPLE QUESTIONS EXPLORED
1 Pooled funding models	<ul style="list-style-type: none"> To what extent do CCGs collaborate with other local services, such as social care, community care, education and housing services? What are the potential benefits from such collaboration? What are the key barriers and enablers of collaboration across services?
2 Regulation	<ul style="list-style-type: none"> What is the current scope and effectiveness of regulation within different parts of the market? Are there any critical gaps to regulation in the sector? How could changes lead to positive impact on users?
3 Outcome-based measures	<ul style="list-style-type: none"> To what extent are outcome-based measures currently adopted? What are the potential impacts of adopting outcome-based measures? What are the potential barriers to adopting outcome-based measures?
4 Eligibility criteria	<ul style="list-style-type: none"> How do eligibility criteria differ across areas? To what extent should the eligibility criterion be tailored to the local area? Do the current eligibility criteria result in any unmet need or exclude particular groups? Do you think there are any advantages to standardising the eligibility criteria across CCGs? Does standardisation compromise service flexibility?
5 Regional wheelchair networks	<ul style="list-style-type: none"> What is the current role of regional wheelchair networks in the provision of wheelchair services? To what extent can regional wheelchair networks be used to increase collaboration and shared learnings across wheelchair services?

2.1.4 STEP 4: DRAFTING AND FORMULATION OF RECOMMENDATIONS

As part of this final step, we have drawn together all the evidence gathered in steps one to three to highlight interventions and recommendations that could address the explored challenges in wheelchair provision. These recommendations are articulated within a robust economic framework, which is outlined below. That is, the recommendations are based on the underlying market failures that may be driving the issue.

2.2 ECONOMIC FRAMEWORK

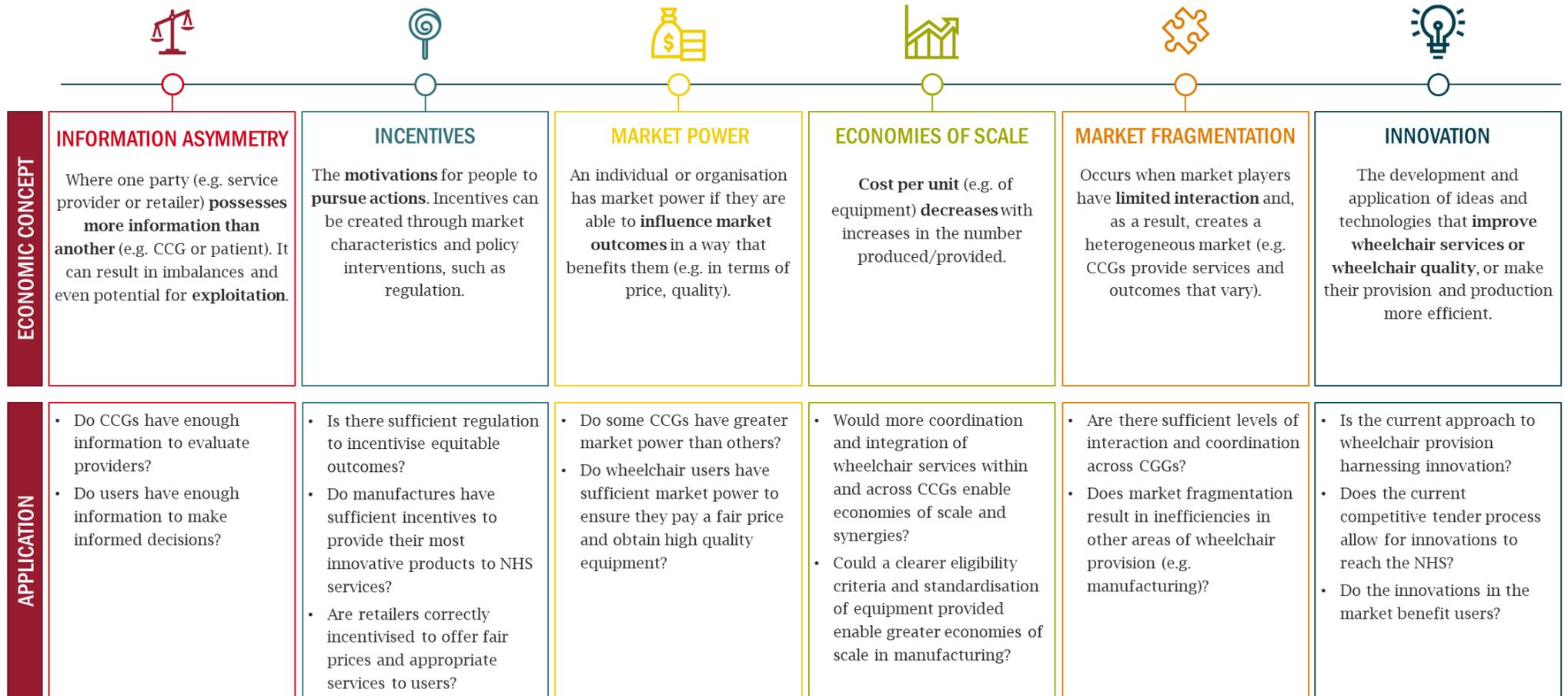
A central aim of the study is to provide an evidence-based articulation of current issues and potential opportunities in wheelchair provision that is grounded in understanding underlying market failures and economic drivers. We have therefore structured the economic study around six identified economic concepts that are particularly relevant to the issues and challenges in wheelchair provision. These are listed below.

- Information asymmetry
- Incentives
- Market Power
- Economies of scale
- Coordination failures
- Innovation

We have described these economic concepts and their application to wheelchair provision in Figure 9. The applications we have included below are intended to be examples rather than a fully comprehensive list. These economic concepts have informed our evidence collection and how we have interpreted all findings.

We have provided a summary of the key economic findings which relate to each overarching topic at the beginning of each finding section. In addition, when outlining our recommendations, we have highlighted the links to the underlying economic concepts and relevant market failures.

FIGURE 9 ECONOMIC CONCEPTS



2.3 STRUCTURE OF THE REPORT

The remainder of the report focuses on the findings of our research. We have structured the report thematically according to five key themes, shown in Table 7. For each theme in this report, we have mapped the relevant stages of work as well as the key economic concepts relevant to the findings. Section 8 draws across the findings in order to highlight opportunities and recommendations.

TABLE 7 REPORT THEMES

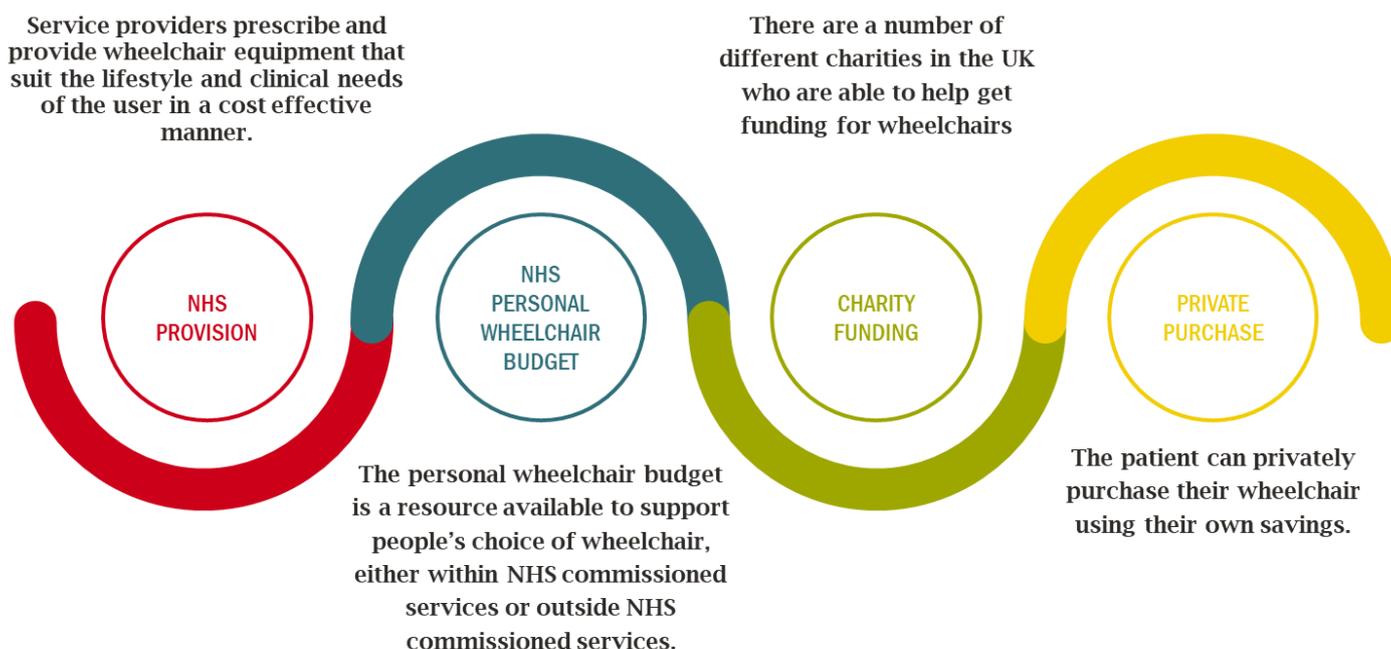
REPORT THEME	KEY QUESTIONS EXPLORED	RELEVANT ANALYSIS METHOD	ECONOMIC CONCEPTS EXPLORED
1 Wheelchair users	<ul style="list-style-type: none"> ■ How many individuals are using wheelchair services, and how does this vary across demographic groups? ■ What are the relative roles of NHS, charity and private provision of wheelchairs? 	<ul style="list-style-type: none"> ■ Quantitative analysis ■ Qualitative engagement 	<ul style="list-style-type: none"> ■ N/A
2 Current approach	<ul style="list-style-type: none"> ■ What are the commissioning models used? ■ What are the current levels of integration and collaboration across services? ■ What are the characteristics of the relationships between key stakeholders? 	<ul style="list-style-type: none"> ■ Evidence review ■ Quantitative analysis ■ Qualitative engagement 	<ul style="list-style-type: none"> ■ Incentives ■ Market power ■ Economies of scale ■ Market fragmentation ■ Innovation
3 Market functioning	<ul style="list-style-type: none"> ■ How effective is competition in the market? ■ Is innovation encouraged? ■ Are there any gaps between individual requirements and market supply? 	<ul style="list-style-type: none"> ■ Evidence review ■ Quantitative analysis ■ Qualitative engagement 	<ul style="list-style-type: none"> ■ Asymmetric information ■ Incentives ■ Market power ■ Innovation
4 Impact on users	<ul style="list-style-type: none"> ■ What are the resulting impacts of 	<ul style="list-style-type: none"> ■ Evidence review ■ Quantitative analysis 	<ul style="list-style-type: none"> ■ Asymmetric information

REPORT THEME	KEY QUESTIONS EXPLORED	RELEVANT ANALYSIS METHOD	ECONOMIC CONCEPTS EXPLORED
	<ul style="list-style-type: none"> the current approach on end-users? ■ Do users of the service receive high-quality care? 	<ul style="list-style-type: none"> ■ Qualitative engagement 	<ul style="list-style-type: none"> ■ Incentives ■ Market power
4 Impact of policy and wider factors	<ul style="list-style-type: none"> ■ What has been the key impact of previous policy changes? ■ Have wider factors such as Covid-19 and Brexit impacted provision? 	<ul style="list-style-type: none"> ■ Evidence review ■ Quantitative analysis ■ Qualitative engagement 	<ul style="list-style-type: none"> ■ Incentives ■ Market power ■ Economies of scale ■ Market fragmentation ■ Innovation

3 FINDINGS: WHEELCHAIR USERS

Following referral and assessment, a user has four different options for receiving wheelchair equipment: direct NHS provision, NHS provision through personal wheelchair budgets, charity funding, and private purchase. These are described in Figure 10. This section explores the number of users accessing wheelchair services and the relative proportions of routes for users to access equipment.

FIGURE 10 COMMON ROUTES FOR USERS TO ACCESS WHEELCHAIR EQUIPMENT



Overall, we find that:

- In 2018-19, there were between 688,000 and 860,000 users in England (or up to 1.37 million users if we consider users of powered mobility scooters).
- The estimated range is very large to reflect the uncertainty around the estimate due to the lack of robust evidence to back our assumptions.
- There were at least 586,000 users registered for NHS wheelchair services in Quarter 3 of 2021-22.²⁹ The vast majority of these users are adults (528,000, 90%), while the remainder are children (58,000, 10%). It is not possible using the available data to determine whether there are any specific barriers in current provision that affect children specifically.
- For NHS provision, while the majority of wheelchair users are classified as low need, this is not true across all CCGs. Some CCGs have a majority of users classified as high need. This could be one of the factors explaining the variation in outcomes across different CCGs.
- NHS wheelchair services vary significantly in terms of their scale. Some services appear to be 'over-subscribed' relative to their peers. This may influence ways of working and could, in part, be due to differences in the demographic composition of CCGs (for instance, higher prevalence of residents

²⁹ 93% of CCGs inputted data in Q3 2021-22. We therefore expect there to be more than 586,000 users registered with wheelchair services.

with long term conditions). This might also create budgetary pressures and result in difficulties achieving national targets.

- The data for assessing the size of the retail (encompassing private purchases and some of those funded from NHS Personal Wheelchair budgets) and charity sector provision is limited, and therefore we have relied on anecdotal evidence from the stakeholder engagement and preliminary quantitative analysis using publicly available data.
- We find initial quantitative evidence of the growth of the retail sector. This is corroborated by evidence collected in the qualitative engagement, where we find there has been a growth in charity and retail provision of wheelchairs due to gaps in NHS provision.
- The qualitative engagement found a difference in focus between NHS provision, which is funded to fulfil clinical and functional needs, in comparison to other providers of wheelchairs, which has the potential to consider wider needs also.

3.1 NHS PROVISION

Data on NHS provision of wheelchairs is available as part of the National Wheelchair Dataset.³⁰ As part of the **quantitative analysis**, we have assessed the composition of NHS wheelchair service users in terms of the number of users and type of need.

This analysis is of users of NHS wheelchair services. Although these services serve a large number of users, NHS services do not meet all the demand for wheelchairs (for example, some individuals opt for private provision). We discuss the total demand for wheelchairs and services and current limitations in deriving this figure in the subsequent sub-section.

Number of NHS users

There were 586,000 users registered with CCGs in the most recent wave of the National Wheelchair Dataset (2021-22 Quarter 3). The vast majority of these users are adults (528,000, 90%), while the remainder are children (58,000, 10%).³¹

Figure 11 shows the breakdown of users by the level of need and age.³² Overall, 35% of users in the third quarter of 2021-22 were classified as low need, 21% as medium need and 18% as high need.³³ Low need is by far the most common category amongst adults (occasional wheelchair users with relatively simple

³¹ The response rate to the latest wave of the National Wheelchair Dataset was 93% of CCGs.

³² The National Wheelchair Dataset does not classify all users registered by type of need. Only new and re-referred users whose episode of care was closed in the reporting period are reported by type of need. We use the proportion of new and re-referred users whose episode of care was closed in the reporting period who are classified as high need as a proxy of the overall proportion of high need users.

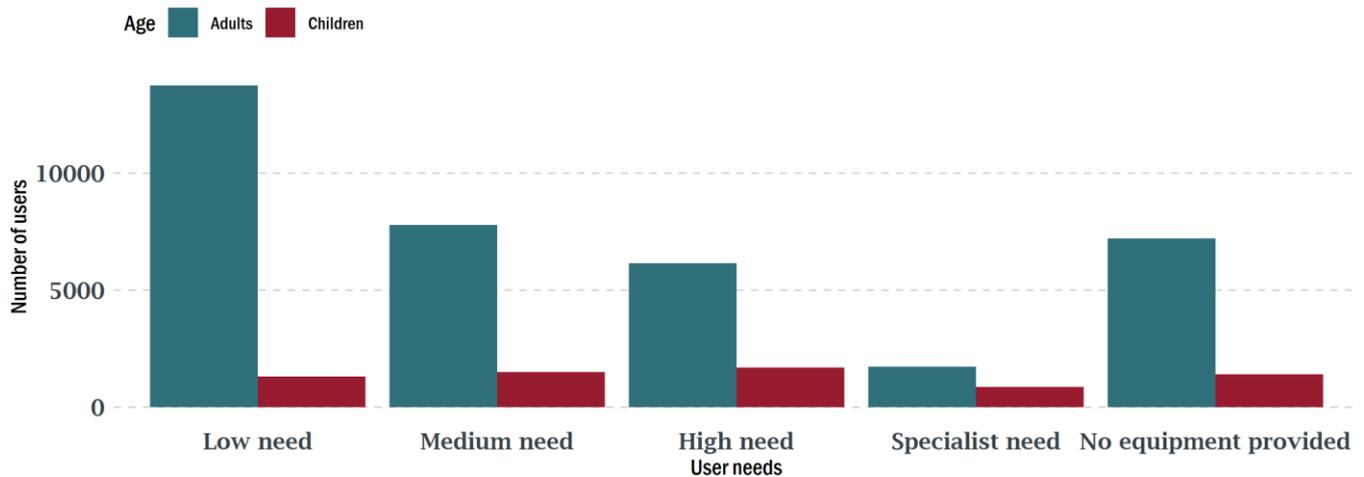
³³ The guidance for using Wheelchair Currency defines different types of needs as follows:

- Low Need: Occasional users of wheelchair with relatively simple needs that can be readily met. Do not have postural or special seating needs. Physical condition is stable, or not expected to change significantly.
 - Medium Need: Daily users of wheelchair or use for significant periods most days. Have some postural or seating needs. Physical condition may be expected to change.
- High Need: Permanent users who are fully dependent on their wheelchair for all mobility needs. Physical condition may be expected to change / degenerate over time.

Available at: <https://www.england.nhs.uk/wp-content/uploads/2017/03/guidance-using-wheelchair-currency.pdf>

needs). The distribution of children across low and high need groups is more even,³⁴ with almost the same proportion of low, medium (daily users of wheelchairs with some postural and/or seating needs) and high need (permanent users who are dependent on a wheelchair for all mobility) users.³⁵

FIGURE 11 BREAKDOWN OF NEW AND RE-REFERRED USERS WHOSE EPISODE OF CARE WAS CLOSED IN QUARTER 3 OF 2021-22 BY USER NEEDS AND DEMOGRAPHICS



Source: Frontier Economics analysis of the National Wheelchair dataset

Our stakeholder engagement suggested that the above breakdowns by need may not be reflective of underlying patterns of need across the population. Some NHS providers may only be offering services to medium and high need users due to a lack of available resources to provide for low need users who are seen as a lower priority. In these cases, low need users may be sign posted to the charitable sector or the retail sector.

We are not able to accurately assess the change in the total number of users registered with NHS wheelchair services over time due to different numbers of CCG reporting data in each period. Since 2015/16, the proportion of CCGs who report wheelchair data has risen significantly over time (<50% of CCGs in 2015/16 to >90% of CCGs in 2019/20). However, we can analyse the change in the number of users within each CCG on average. We do not observe any clear trend in the total number of enrolled users in *each* CCG on average over the same time period.

Regional variation

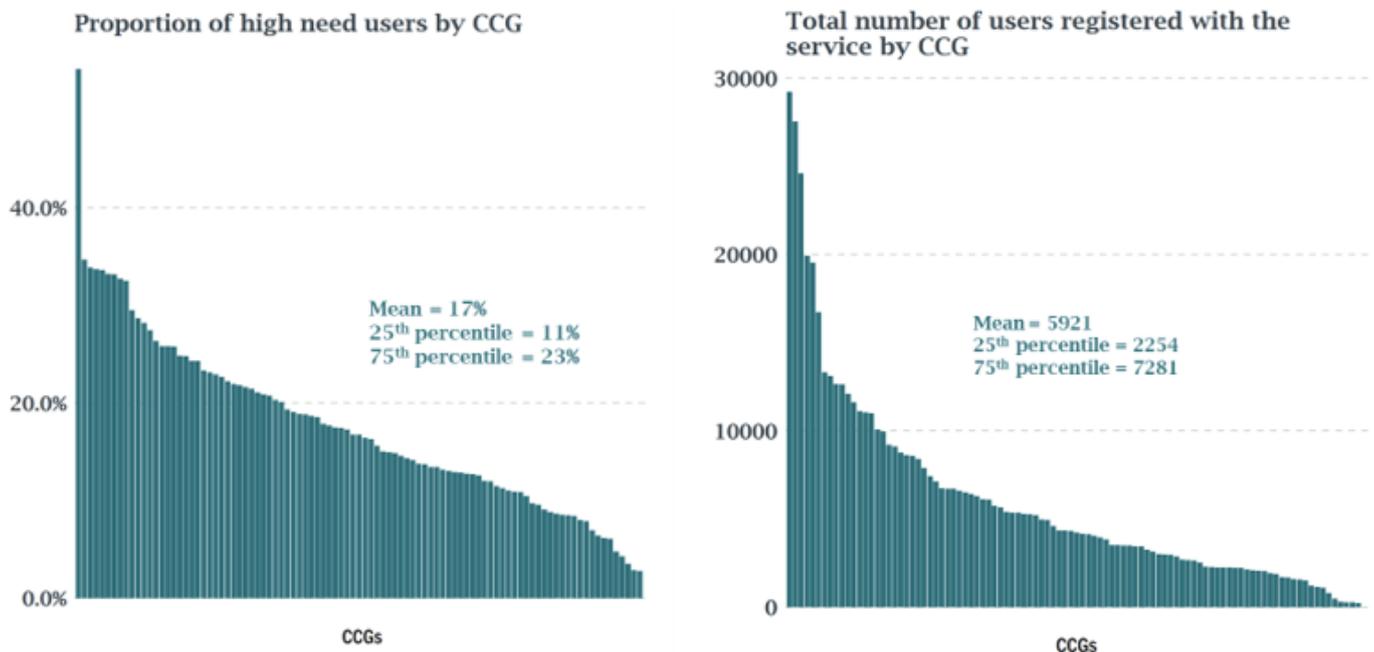
We find that there is regional variation in the number of users registered and the need of these users. This variation remains even when we normalise by population, suggesting that some services are ‘over-subscribed’ in comparison to others, particularly those in the North of England. This may have important implications when assessing what is possible for a service to achieve in terms of efficiency.

³⁴ This may be driven by the difference in case mix of children who need a wheelchair versus adults who need a wheelchair.

³⁵ The qualitative engagement found that the classification of wheelchair users into different need groups is subjective. This is discussed further in section 7.2.2.

- **There is variation across the number of users registered to wheelchair services.** Figure 12 shows the number of users registered by CCG. We observe that some large CCGs have between 25,000-30,000 users registered. On the other hand, some smaller CCGs have less than 1,000 users registered.
- **There is variation in the case mix across CCGs.** Figure 12 shows the proportion of high-need users by CCG. Over 30% of new and re-referred users in certain CCGs were classified as high-need in the third quarter of 2021-22. However, in some other CCGs this proportion is less than 10%. This implies that some CCGs face a more complex case mix than others. In the **qualitative engagement**, we find that this variation is driven by the following factors: a) demographic differences in local populations served b) differing interpretations of how needs should be classified c) the practice of some NHS providers only offering services to medium and high-need users.

FIGURE 12 TOTAL NUMBER OF USERS REGISTERED IN THE SERVICE AND PROPORTION OF HIGH NEED USERS BY CCG - QUARTER 3 2021-22



Source: Frontier Economics analysis of the National Wheelchair dataset

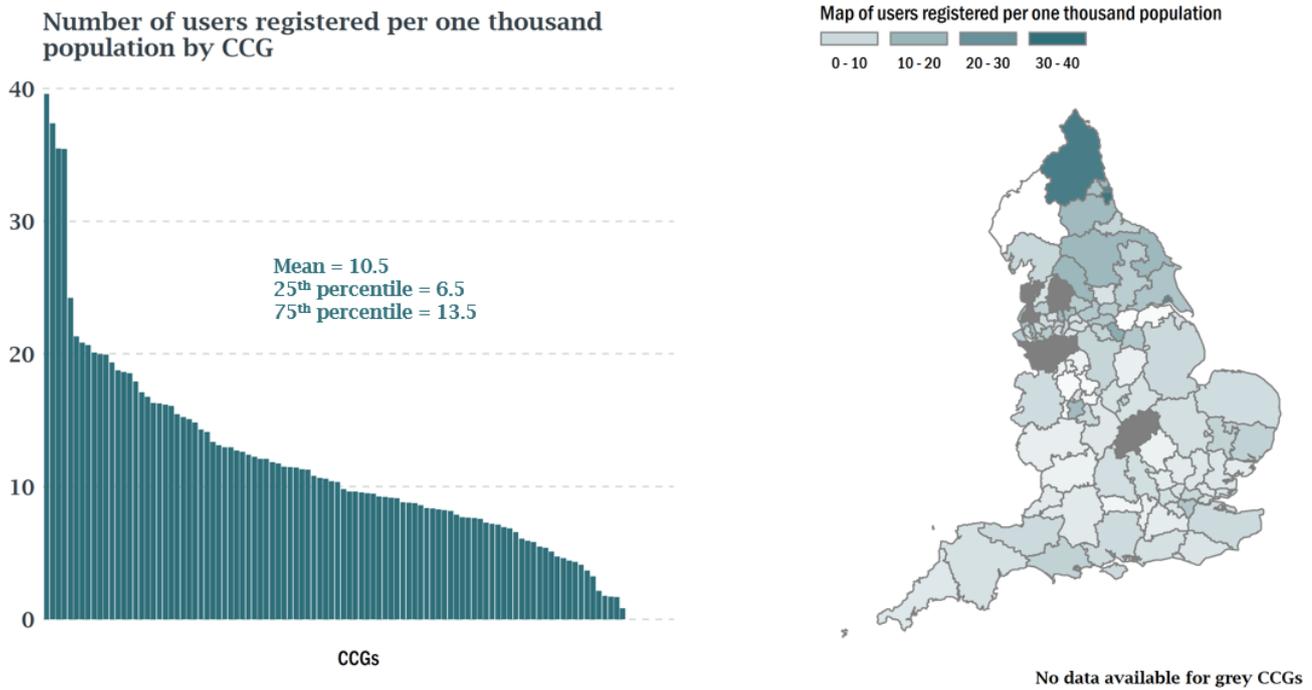
Note: The National Wheelchair Dataset does not classify all users registered by type of need. Only new and re-referred users whose episode of care was closed in the reporting period are reported by type of need. We use the proportion of new and re-referred users whose episode of care was closed in the reporting period who are classified as high need as a proxy of the overall proportion of high need users

- **Some CCGs appear to be ‘over-subscribed’ in comparison to others.** Figure 13 shows the number of registered users per one thousand population by CCG. After normalising the number of users registered in each CCG by the CCG population size, we still observe considerable variation across CCGs. Almost half of wheelchair services currently have fewer than ten users enrolled per 1,000 residents. However, a minority have considerably more than this: certain CCGs have more than 30 users registered per 1,000 residents. This suggests that some services are ‘over-subscribed’ in comparison to others, which has the potential to impact the outcomes of the service. This could be driven by areas with a relatively low number of registered users per head not fully meeting all demand in their respective area.

- **‘Over-subscribed’ services appear to be concentrated in the North of England.** Geographically, many of the services with the highest number of enrolled users per head are located in the North of the country, as shown in Figure 13. This variation could reflect different demographic pressures as well as inconsistencies in data reporting.

FIGURE 13 NUMBER OF REGISTERED USERS PER ONE THOUSAND POPULATION BY CCG – QUARTER 3 2021-22

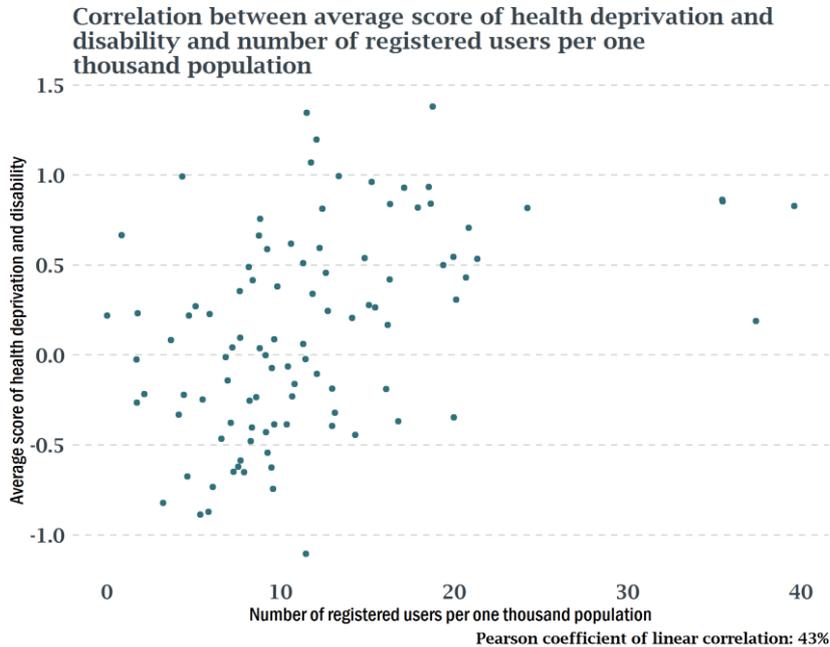
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Source: Frontier Economics analysis of the National Wheelchair dataset

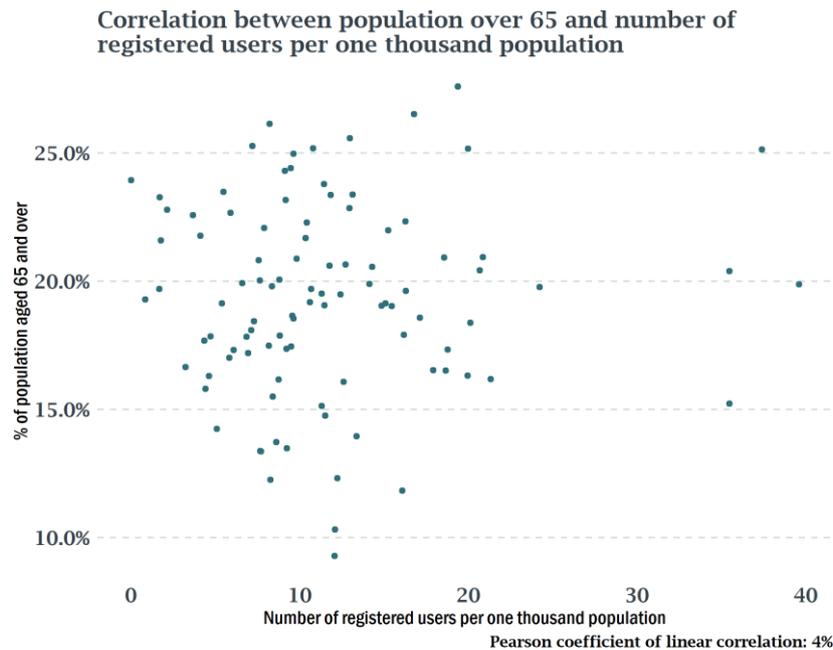
We have explored variation in CCG’s demographic composition in order to understand whether this is a key driver of the differing mix of users. Figure 15 shows that there is a considerable correlation between the average score of health deprivation and the number of registered users per head of population. We observe no correlation between the number of enrolled users per head of population and the proportion of the population aged 65 and over (Figure 15). Additionally, on average, the top-five CCGs with the highest number of enrolled users per head of population do not have a higher proportion of the population aged 65 and over relative to the national average. Therefore, a large proportion of this variation in the number of users per head of population will be driven by CCGs’ and providers’ choices around eligibility criteria (which is likely to be impacted by funding availability).

FIGURE 14 CORRELATION BETWEEN CCG AVERAGE SCORE OF HEALTH DEPRIVATION AND DISABILITY AND NUMBER OF REGISTERED USERS PER ONE THOUSAND POPULATION



Source: Frontier Economics analysis of the National Wheelchair dataset and English Indices of Deprivation 2019

FIGURE 15 CORRELATION BETWEEN CCG POPULATION OVER 65 AND NUMBER OF REGISTERED USERS PER ONE THOUSAND POPULATION



Source: Frontier Economics analysis of the National Wheelchair dataset and English Indices of Deprivation 2019

3.2 GROWTH OF WIDER WHEELCHAIR PROVISION

In this sub-section, we explore the growth of the provision of wheelchair equipment beyond NHS provision in response to identified gaps in the services provided by the NHS.

In addition to users being able to access wheelchairs through direct NHS provision, alternative routes for accessing wheelchair equipment include: NHS Personal Wheelchair Budgets, charity funding and private purchase through the retail sector.

The data for assessing the size of the retail and charity sector provision is limited. We have therefore relied on anecdotal evidence from the stakeholder engagement and preliminary quantitative analysis using publicly available data. Furthermore, although Personal Wheelchair Budgets are provided through the NHS, they allow individuals to purchase wheelchairs directly from retailers and might therefore be double-counted when attempting to estimate the overall national demand for wheelchair services. There is no data available that allows us to assess the magnitude of this double counting issue and correct it.

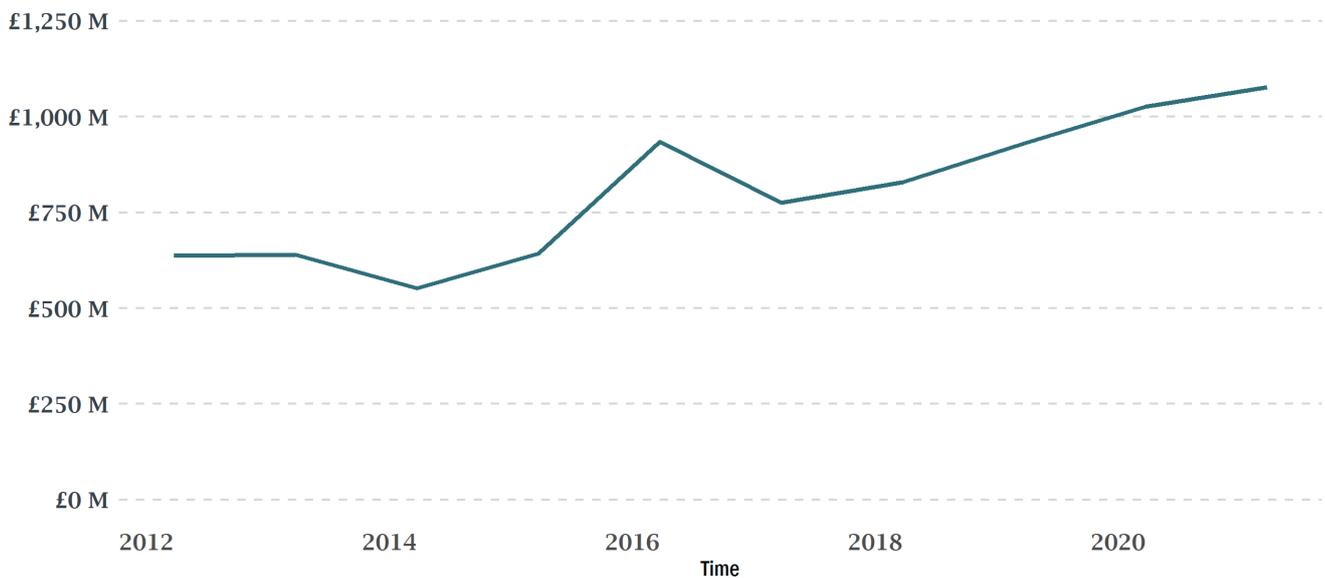
We explored the growth of the retail sector as part of the **descriptive quantitative analysis**. Particularly, we analysed the evolution over time of total annual turnover for the *Retail sale of medical and orthopaedic goods in specialised stores*.³⁶ The data shows that annual turnover has seen a 69% real increase from 2012 to 2021, going from £637m to £1,076m.³⁷ This retail category is broad and includes more than wheelchairs,³⁸ but the observed increase in turnover suggests a substantial increase in demand for wheelchair equipment over the last ten years.

³⁶ This category of retail products is based on the 2007 revision of the Standard Industrial Classification (UK SIC 2007). The UK SIC 2007 is a major revision of UK SIC 2003 which changes at all levels of the SIC. This is the most granular category, and there is not a SIC code that relates to wheelchairs specifically.

³⁷ In 2021 prices.

³⁸ <https://webarchive.nationalarchives.gov.uk/ukgwa/20160105230903/http://www.ons.gov.uk/ons/guide-method/classifications/current-standard-classifications/standard-industrial-classification/index.html>

FIGURE 16 TOTAL ANNUAL TURNOVER FOR RETAIL SALE OF MEDICAL AND ORTHOPAEDIC GOODS



Source: Frontier Economics analysis of ONS data

Note: All values are shown in 2021 prices

Across all the analysis areas included in this study, we found a clear gap in understanding the levels of demand for wheelchair services and the extent to which this demand has been met.

In the **qualitative engagement**, stakeholders suggested growth in charity and retail provision of wheelchairs due to gaps in NHS provision as well as demographic change, such as an ageing population. The NHS gaps highlighted include the quality, type of equipment provided and the length of time to provide equipment. This was raised in relation to powered wheelchairs, where there is a perception that the issuing criteria for a powered wheelchair are too high. That is, some individuals would benefit from having a powered wheelchair but are unable to access them with the current criteria levels.

We found examples of stakeholders adapting their offerings and services in order to cater for gaps in NHS services. For example, a charity stakeholder told us that they are now providing increasing amounts of funding for wheelchair rental services in specific areas where there are long NHS waiting times. A retailer suggested that trade is now 95% from private funding and 5% from NHS voucher schemes, versus an estimated 50-50 split around five years ago. Further, stakeholders suggested a perceived reluctance of NHS services to advertise their wheelchair service due to the potential to create extra demand. Overall, this suggests a gap in terms of the number of users of NHS wheelchair services and the true demand for wheelchair services. As a result, there is 'unmet' demand for wheelchair equipment.

Some stakeholders felt that currently, charitable provision of wheelchairs is somewhat fragmented, and some charities have remits that partially overlap. It may be possible to generate a larger positive return on charitable funds if there was some pooling of resources.

As part of the **quantitative analysis**, we have conducted an initial assessment in order to provide a view of the scale of demand for wheelchair services. We estimate that the overall number of wheelchair users in

2018-19 was between 688,000 and 860,000 users (or up to 1.37 million users if we consider users of powered mobility scooters).³⁹ This compares to 586,000 users registered with CCGs in the most recent wave of the National Wheelchair Dataset (2021-22 Quarter 3). The range applied to the overall number of users is very large to reflect the uncertainty around the estimate due to the lack of robust evidence to back our assumptions (see footnote 24). Furthermore, the estimate is based on 2018 data and may not reflect the most recent evolution of demand. We have highlighted this as an area for further work.

The identified gap between NHS provision and the demand for wheelchairs was highlighted by the **qualitative engagement** to have a number of critical implications for the wider wheelchair sector:

- Unmet demand results in an increasing number of individuals seeking to receive care through private funding. This places a greater importance on the equitable functioning of the private market for wheelchairs. This is explored further in section 5.3.
- The resulting ‘unmet demand’ of individuals is anticipated to have wider costs. By not meeting individual demands, an individual’s health may further deteriorate, resulting in wider societal costs such as reduced ability to maintain employment or greater demands for social care. This leads to increases in long-term costs. A number of stakeholders suggested raising awareness of the wider impacts that wheelchair services can have, reflecting potential repercussions in terms of future social care costs and direct NHS costs. We explore the impact from a user perspective in section 6.

Stakeholders suggested that any assessment of an individual’s requirements for wheelchair services is complex. Stakeholders had different views as to what constitutes an individual’s true ‘demand’. For example, it is often difficult to differentiate between a user’s clinical needs, holistic needs and wants and desires for the equipment. In addition, there are often interactions between these ‘need’ types.

The focus of NHS provision is generally on clinical needs due to the levels of funding provided. As a result, users often have unmet expectations, which some stakeholders interpret as unmet demand. Charities and user groups suggest that ‘demand’ for services should be interpreted to include both the clinical demand *and* holistic needs of a user. That is, there should be a wider social view of needs across the sector. For example, components such as seat risers can unlock significant social benefits for users, by enabling them to have conversations at eye-level. However, seat risers were rarely considered to be a clinical need.

³⁹ This analysis is based on the following data: (1) The latest wave (2018-19) of the Family Resources Survey - based on this data we estimate 5.7 million people with a mobility disability in England; (2) an analysis of 2018 National Travel Survey data on use of mobility aids by NatCen Social Research (2020). NatCen analysis shows that of all those having difficulty going out on foot unaided, 3% use a powered wheelchair, 12% use a manual wheelchair and 9% use a powered mobility scooter. These three groups of users are not mutually exclusive, because NTS respondents could select more than one answer to the question on type of mobility aid used. We do not know to what extent these three groups overlap each other. Combining these two data sources, we estimate that in 2018-19 in England there were around 170,000 powered wheelchair users, 688,000 manual wheelchair users, and 515,000 powered mobility scooter users. Depending on the extent to which these three groups overlap, we estimate a total number of wheelchair users in the UK in 2018-19 between 688,000 (in which case there is complete overlap and all powered wheelchair users are also manual wheelchair users) and 860,000 users (in which case there is no overlap). If we include users of powered mobility scooters the estimated range becomes 688,000 (in a scenario with complete overlap) to 1.37 million users (in a scenario with no overlap).

4 FINDINGS: CURRENT APPROACH

4.1 KEY MESSAGES

This chapter explores the current approach to wheelchair provision in England, including wheelchair provision across NHS, charity and private providers. We discuss the stages of wheelchair provision, the role of key stakeholders and their relationships, the levels of integration in NHS commissioned wheelchair services and the levels of funding for NHS wheelchair services.

We have summarised the findings of this section and linked the findings to the key economic concepts in Table 8. It is clear that provision of wheelchairs in England is complex in terms of both the multiple stages involved and the varied forms of multi-disciplinary expertise required. This complexity can lead to challenges in some cases, which is explored further in subsequent sections.

TABLE 8 KEY FINDINGS: CURRENT APPROACH

ECONOMIC CONCEPT	FINDINGS
 Incentives	<ul style="list-style-type: none"> Although the Model Service Specification for Wheelchairs provides guidance on the role, function and responsibilities of NHS commissioned wheelchair services, it is non-mandatory in nature and not consistently applied across CCGs. Many of the mechanisms for CCGs to hold providers to account are developed within individual CCGs rather than mandated across CCGs. This results in inconsistent practices. The specific model of wheelchair provision adopted by CCGs has implications for the incentives created. Key variations in the models adopted involve the level of private sector involvement (e.g., whether services are in-house, partially contracted out to the private sector, or full contracted out), the payment model (e.g., block contracts versus pay per assessment or a combination), and whether wheelchair services are combined with other services. For example, a block contract model of provision is expected to create greater cost certainty but reduce the incentives to adopt a flexible user-centric model.
 Market power	<ul style="list-style-type: none"> Economies of scale are generally limited in NHS wheelchair provision due to each having the potential to adopt and develop its own unique wheelchair service independently from one another. We found limited mechanisms for users to communicate with CCGs, providers and retailers, resulting in a limited ability for users to be able to influence the approach to care. In particular, we found that users have relatively few options for raising a complaint about an NHS service.
 Economies of scale	<ul style="list-style-type: none"> We found wheelchair networks, such as Regional Managers Networks and the National Wheelchairs Managers Forum, to be effective mechanisms for harnessing collaboration across CCGs and driving shared learnings. Regional networks are used as a mechanism for service managers to benchmark their services against other comparable services. Through

ECONOMIC CONCEPT	FINDINGS
 <p data-bbox="204 723 400 784">Market fragmentation</p>	<p data-bbox="485 226 1453 409">regional networks, care providers (including clinicians) can develop and share best practice guidance around new policy initiatives, particularly in relation to Personal Wheelchair Budgets. Joining up of activities (such as procurement) and sharing learnings across areas can lead to economies of scale.</p> <ul style="list-style-type: none"> <li data-bbox="435 439 1465 622">■ There are a significant number of stages in wheelchair provision, from referral to the provision of equipment, repair of equipment, and potential handover or transfer of users to other services. This increases the level of required coordination, particularly given that a lot of this activity in the NHS is managed locally. <li data-bbox="435 645 1474 869">■ We found that issues of local fragmentation, particularly related to a lack of clear accountability, have prevented the development of joined-up local services. This has led to gaps in the services provided, such as for children’s wheelchairs, due to fragmentation between local authorities, who are responsible for equipment for education needs, and the wheelchair services, who are responsible for equipment for medical needs. <li data-bbox="435 891 1481 1070">■ A clear theme across the evidence collected is the lack of a central body for wheelchair services and the corresponding lack of integration across CCGs. While individual CCGs can create wheelchair services tailored to the local context, this can give rise to a “<i>post-code lottery</i>”, with varying quality of care across services.
 <p data-bbox="204 1182 352 1209">Innovation</p>	<ul style="list-style-type: none"> <li data-bbox="435 1104 1469 1283">■ There are examples of innovative care practices with commissioners and providers of care pooling funding with local services, such as education, social care and housing services. By pooling funding across services, users were able to access equipment that they would have otherwise been unable to.

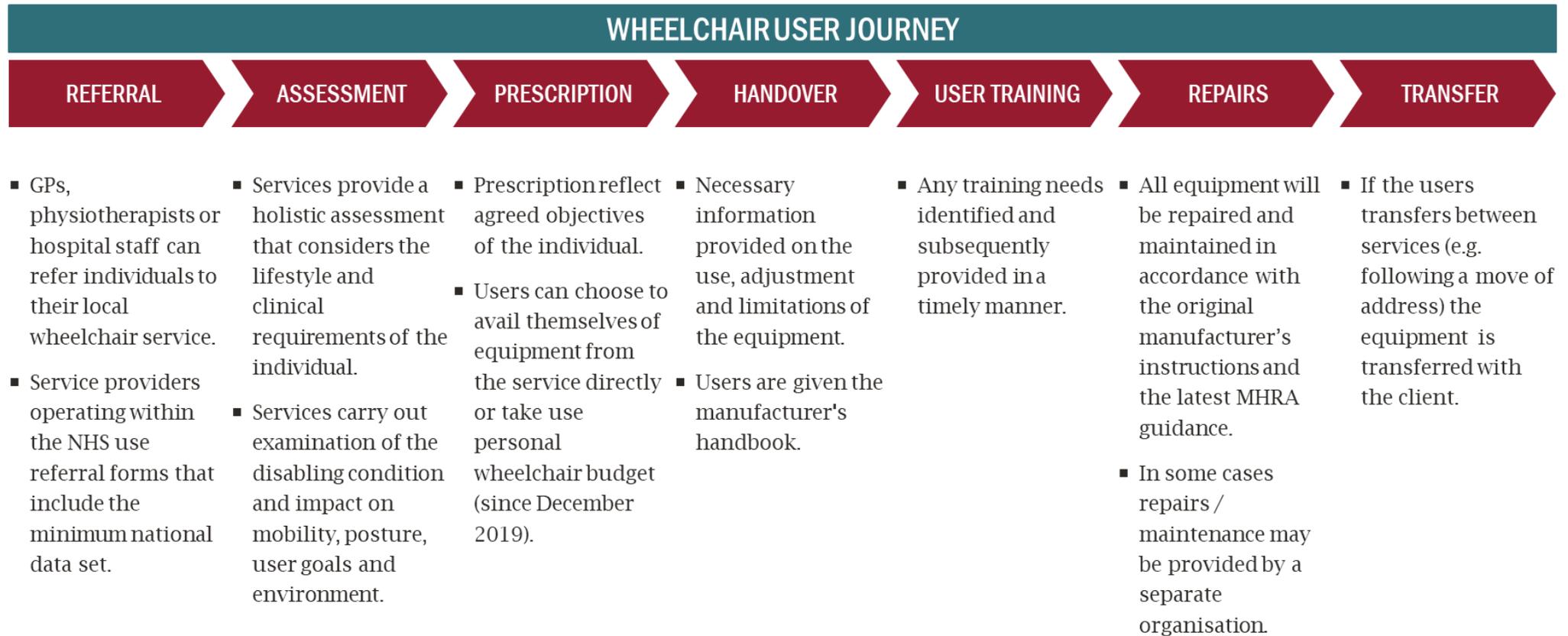
4.2 STAGES OF WHEELCHAIR PROVISION

We conducted an in-depth review of NHS guidance for wheelchair provision as part of our review of existing evidence and documentation. The ‘Model Service Specification for Wheelchair and Posture Services’ (‘Model Service Specification’), published in 2017, describes the role, function and responsibilities of wheelchair services.⁴⁰ However, it is important to note that this guidance is non-mandatory. As a result, the provision of care across CCGs may vary from that defined by the Model Service Specification, and we were told in the qualitative engagement that in some cases, the level of funding allocated to wheelchair provision by certain CCGs would not be sufficient to deliver all aspects of the Model Service Specification.

There are multiple stages of service provision along the wheelchair user journey, from referral, to receiving equipment and any repairs or service transfers. These stages of provision are outlined in Figure 17.

⁴⁰ <https://www.england.nhs.uk/publication/model-service-specification-for-wheelchair-and-posture-services/>

FIGURE 17 STAGES OF WHEELCHAIR PROVISION



Source: Frontier Economics based on the Operating Model for NHS Commissioned Wheelchair Services and the Model Service Specification for Wheelchair and Posture Services

Note: Medicines and Healthcare Regulatory Agency (MHRA)

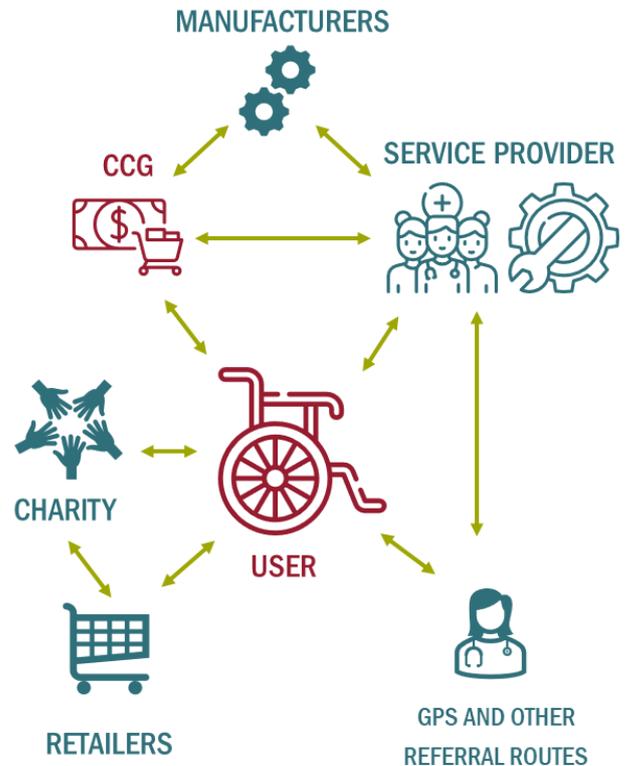
For many users, in particularly those with progressive conditions, this journey will not be linear i.e., there will be periods of reassessment and new equipment issued.

4.2.1 STAKEHOLDER ROLES AND RELATIONSHIPS

Our **evidence review** and **qualitative engagement** identified a number of critical stakeholders involved in wheelchair provision and interactions across stakeholders, as illustrated in Figure 18. These stakeholders involve multiple providers of care, including GPs and other referrers such as therapists, service providers, manufacturers and retailers.

The Model Service Specification outlines that CCGs should commission wheelchairs with a user focus and adapt the specification for the local characteristics of the area. Providers should offer a comprehensive service that caters for all needs and demographic characteristics. We provide detail on the roles outlined in the Model Service Specification for commissioners and providers is provided in Table 9.

FIGURE 18 STAKEHOLDER INTERACTIONS



Note: Please note the above diagram is a simplification and in practice there are interactions that are not represented. For example, joint working with CCGs with education.

TABLE 9 ROLE OF COMMISSIONERS AND PROVIDERS IN WHEELCHAIR PROVISION

STAKEHOLDER	ROLE
COMMISSIONERS 	<p>Clinical Commissioning Groups (CCGs) purchase wheelchair services on behalf of users. CCGs should set the parameters for each service and reflect user requirements in the specification of service.</p> <ul style="list-style-type: none"> ■ Provide adequate funding; ■ Assess information on existing service provision; ■ Determine unmet needs; ■ Achieve value for money; and ■ Explore joint/innovative commissioning models and collaborate across organisational boundaries; ■ Introduce personal wheelchair budgets.
PROVIDERS	<p>Service providers should offer a comprehensive service based on commissioners' requirements for</p> <ul style="list-style-type: none"> ■ Providing for clinical needs; ■ Considering the holistic needs of the user;

STAKEHOLDER	ROLE
	<p>all people of all ages with long-term mobility problems in accordance with statutory requirements. The providers carry out assessments and prescribing of wheelchairs, specialised seating, modifications and accessories that reflect the needs of the users.</p> <ul style="list-style-type: none"> ■ Sharing information about the service in an accessible format; ■ Training staff and offering continuous professional development. <p>GP's will usually provide the initial referral to wheelchair service providers. However, referrals can also be made by other health and social care professionals, such as physios.</p>

Source: Frontier Economics based on the Model Service Specification for Wheelchair and Posture Services

Many stakeholders interviewed as part of the **qualitative engagement** described that effective and transparent relationships across stakeholders with clear mechanisms for communication are critical in developing successful wheelchair services.

As part of our **qualitative engagement**, we were told about a variety of mechanisms that can be used to create accountability between CCGs and providers, such as regular meetings, KPI updates and sharing and benchmarking of the data required for the National Wheelchair dataset. However, a number of CCGs reported problems in building an effective relationship with providers due to issues such as high workforce turnover and providers not having enough time to collect detailed data on the quality of outcomes achieved. On the other hand, several providers noted that they struggled to generate any engagement with CCGs if they lack a dedicated role for commissioning wheelchair services, in which case they may be reluctant to discuss potential adaptations to service design or contracting.

The **qualitative engagement** found difficulties relating to workforce issues. A variety of stakeholders interviewed suggested that it is increasingly difficult to recruit specialised occupational therapists or fully qualified rehabilitation engineers. It was also suggested that NHS salaries are too low to attract and retain human resources that are sufficiently qualified. Rehabilitation engineers, in particular, have many outside options in the private sector that are better paid.

We found a lack of effective routes where users can communicate with CCGs, providers and retailers to highlight issues in relation to the care they have received or the current approach to care adopted. We were told that users often had to rely on the effectiveness of special interest groups, whose influence is limited and varies by CCG according to user groups. The implications of these relationships from a user perspective are explored further in Section 6.

Table 10 provides identified best practice examples for stakeholders' relationships and barriers to developing effective relationships.

TABLE 10 STAKEHOLDER RELATIONSHIPS FINDINGS

STAKEHOLDER RELATIONSHIP	BEST PRACTICE EXAMPLES	BARRIERS
1 CCGs and providers	<ul style="list-style-type: none"> ■ “Partnership” working through clearly assigned individuals responsible for maintaining relationships and regular touch points. ■ Networks that create collaboration across CCGs and providers. ■ Transparent data collection that is consistent in order to allow for performance to be benchmarked against other areas. 	<ul style="list-style-type: none"> ■ Mechanisms to create accountability are developed within individual CCGs rather than mandated across CCGs, resulting in inconsistent practices. ■ The exception to this is the data collection mandated through the National Wheelchair dataset. However, not all CCGs input the required data, and the data collected is across a limited number of variables. ■ High turnover across commissioners and providers, resulting in instability. ■ High turnover also results in insufficient staff training and staff experience. ■ Fixed block contracts for wheelchair services can result in limited incentives for CCGs to engage and check in with providers. ■ Some CCGs do not prioritise wheelchair services and therefore lack the required expertise to effectively engage with providers and may even leave roles related to wheelchair commissioning unfilled.
2 Providers and users	<ul style="list-style-type: none"> ■ Clearly signalled feedback mechanisms between providers and users. ■ The use of outcome-based measures that monitor the progress of users against their specific goals. 	<ul style="list-style-type: none"> ■ We found communication issues across multiple aspects of wheelchair provision. For example, users are not given an explanation for delays and a lack of communication between providers of care can result in users undergoing multiple assessments. ■ We found limited mechanisms for users to flag concerns with current care and to choose alternative providers of care.
3 Users and CCGs	<ul style="list-style-type: none"> ■ Active special interest groups such as parent and carer groups 	<ul style="list-style-type: none"> ■ Awareness of special interest groups tends to be low. ■ The levels of influence of special interest groups with CCGs and providers.

Source: Frontier Economics based on qualitative engagement

4.3 MODELS OF SERVICE PROVISION

The Model Service Specification does not prescribe a particular configuration of wheelchair services in terms of how the delivery of service is discharged. As a result, we found a variety of different models of wheelchair service provision. We find that the model adopted has implications for the incentives in wheelchair provision, flexibility, efficiency and prioritisation of wheelchair services. We found four key dimensions by which commissioning models for wheelchairs vary. These are:

1. Whether services are provided by an NHS provider or private provider, or a combination;
2. The payment model used for commissioning services;
3. Whether wheelchair services are ‘bundled’ with other services; and
4. The incorporation of a “clinical mindset”.

Our findings for each of these areas are outlined below.

Levels of private sector involvement

Local NHS wheelchair services may configure their offering in different ways, using a combination of NHS in-house provision, public sector involvement or other bodies (such as the charity sector or social enterprises). This is illustrated in Figure 19. Some services are fully delivered in-house across all the user-facing elements of the wheelchair user journey (all services will purchase equipment from private manufacturers). Services may be partially contracted out. For example, repair and maintenance services could be tendered to a private provider, but with assessment services provided within the NHS. And finally, services may be full contracted out to a provider through a block contract to a private provider of wheelchair services.

FIGURE 19 LEVELS OF PRIVATE SECTOR INVOLVEMENT

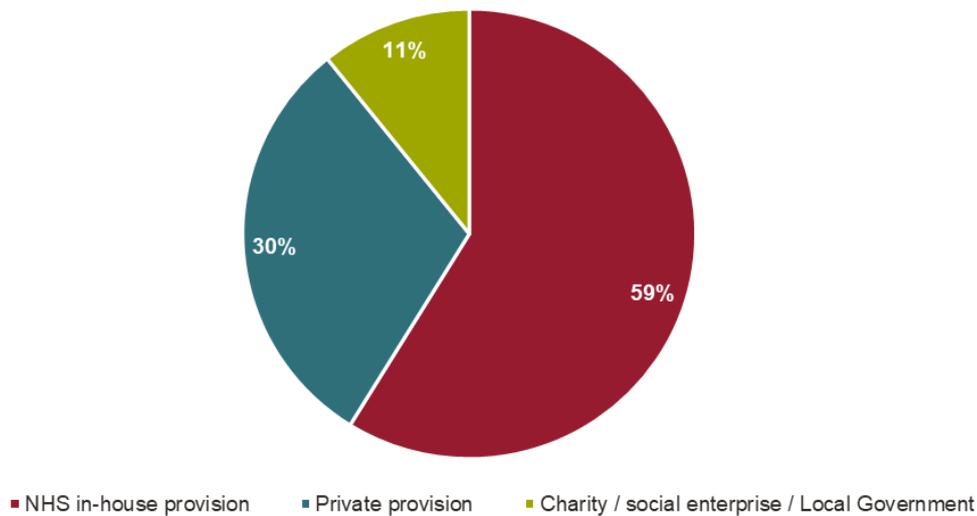


The qualitative engagement suggested that, in principle, all models can, and in some cases do, provide high-quality care. However, there may be different incentives for private providers versus NHS providers. For example, we were told that some private providers may be more focused on meeting certain budgetary requirements set by a CCG, while in-house NHS provision may be more able to call in wider clinical expertise. As a response to the incentives created, we found that charity provision has developed in order to fill gaps in gaps with NHS provision and the private sector, for example, through the provision of powered wheelchairs or focus on children’s wheelchair provision. Stakeholders noted that users and their families may sometimes have a better experience engaging with charitable provision than with NHS services, if they feel less obliged to continually make the case for their access to equipment and services.

However, other stakeholders emphasised that often private providers are asked to take over struggling services that have been previously run by NHS providers and were performing poorly. In these cases, comparing performance across areas and attributing any differences to the service model employed is difficult without a detailed understanding of these contextual factors.

We have analysed data on the model of NHS wheelchair provision used across the country (see Figure 20).⁴¹ This dataset covers over a hundred local wheelchair services in England and indicates the primary provider of wheelchair services in the area. Our analysis of the primary provider organisation indicated that almost 60% of services across the country are run by an NHS organisation.⁴²

FIGURE 20 MODELS OF NHS WHEELCHAIR PROVISION



Source: Frontier analysis of MND Association Wheelchair Service Directory
 Note: This directory does not include all CCGs but does cover the vast majority of England

A further 30% of services are run by private sector providers. In total, we identified eight private firms that offer services to at least one CCG. However, over two-thirds of these privately run services are managed by the two largest firms. No other private provider operated more than three separate services. This reinforces the finding from our qualitative engagement that some CCGs do not have a wide choice when selecting a private provider of wheelchair services (see section 5.3 for further details).

The final 11% of wheelchair services were run by social enterprises, charities, community interest groups or local government organisations.

Payment model

Our qualitative engagement revealed three different types of payment models with providers. These are:

1. **Full block contract models** for both assessment of potential wheelchair users and for wheelchair equipment;

⁴¹ This information was provided to us by the Motor Neurone Disease Association following a desk review.

⁴² Either an NHS Trust or a CCG themselves.

2. **A combination of block contracts and pay per item**, such as block contract for assessment and pay per time for equipment; and
3. **Pay per assessment and per equipment.**

We found from our **qualitative engagement** that the payment model adopted has implications for the services provided. Commissioners suggested that models with a pay per item or assessment element allow for greater flexibility for services, particularly by providing increased mechanisms to order different types of equipment. In contrast, we found that block contracts allow commissioners to have a greater understanding of the costs of the service from the outset and therefore provide more certainty but less flexibility.⁴³

In addition, our **evidence review** and **qualitative engagement** highlighted a number of concerns over block contract models.

- **Limited incentives to develop an efficient service.** Previous reviews of wheelchair provision have noted that there are limited incentives for service providers to become more efficient with block contract arrangements. Block contracts can result in a specified volume of equipment being commissioned within the available budget. As a result, the provider may not achieve extra income from seeing more users or prescribing additional chairs, or there may be incentives for long waiting lists if a large proportion of the budget is used early in the financial year.¹
- **An emphasis on price over service quality.** Stakeholders suggested that the nature of competition when tendering services as a block contract results in too much emphasis on price. A provider who offers a lower price for the service may win but then will be unable to deliver the service. It was highlighted that in wheelchair services, providers often do not have sufficient information to properly assess the likely demand of the service and how this demand may change in the future.
- **Block contracts can limit user choice.** Block contracts can be associated with providers who will prescribe chairs from a limited number of manufacturers. This results in limitations to the levels of user choice available. It was therefore suggested by stakeholders that a movement away from block contracts may result in users having a greater choice in the chairs provided.
- **Block contracts are often not well understood.** One commissioner suggested that block contracts are often legacy contracts. These “*inherited*” models were suggested to be, at times, not fully understood by commissioners. This links limited levels of expertise for specialist wheelchair commissioning in certain CCGs.

It is noteworthy that the development of the National Wheelchair Tariff has the objective of moving CCGs away from block contracts models of service provision. This is further discussed in section 7.2.2

Bundling of wheelchair services

Commissioners highlighted that wheelchair services could be procured as a singular service or as part of a wider package of services. For example, wheelchair assessment services may be procured alongside equipment services, community services, static seating and wider services beyond wheelchair provision.

Multiple stakeholders suggested that procuring wheelchair services as a single service allows for increased prioritisation of wheelchair needs, better data collection and the potential to create a more holistic user

⁴³ Please note our stakeholder engagement did not discuss whether there are different lengths of contracts between NHS services and privately tendered services.

journey. In contrast, stakeholders highlighted that where wheelchair services are ‘bundled’ with other services, there is a risk of funding leaking to other areas, reducing the funding available for wheelchair services.

It is important to note that commissioners outlined multiple benefits to pooling budgets across services whilst keeping separate procurement of services, such as social services and education. This is discussed in more detail as part of the ‘pooled funded models’ case study in section 4.4.

Incorporation of a “clinical minded commissioning”

Our engagement found that some but not all CCGs incorporate clinical expertise in each stage of service procurement and delivery. Clinician involvement was suggested by multiple stakeholders to be critical at the design stage of the commissioning approach as well as during business-as-usual activities (e.g., knowing when to tailor eligibility criteria to meet individual needs). If commissioners themselves have a better understanding of the potential variety of users’ requirements, it was suggested that the overall service was more likely to run smoothly.

Further, the incorporation of user voices in the commissioning process was suggested to be critical in creating a user-focused model of care. We found examples of local user groups. However, the prominence of local user groups was suggested to vary across England, and their levels of influence within CCGs to be too limited to influence decision making.

4.4 INTEGRATION OF SERVICES

Both existing evidence and our qualitative engagement highlighted the potential benefits of integration across wheelchair services. However, we found mixed evidence of integration of services across two dimensions: within CCGs and across CCGs.

Integration with other local services

Integration with other local services relates to CCGs and providers of care effectively coordinating with local services, such as education, social care and housing services, in order to provide a joined-up service to users. In practice, this coordination could involve creating forums to jointly agree on the best set of services to provide for a user and combining budgets in order to provide that service. This integration with other local services was suggested to be in the form of a collaborative arrangement rather than through the joint procurement of services.

As part of our **evidence review**, we found that issues of local fragmentation, particularly related to a lack of clear accountability, have prevented the development of joined-up local services. A number of evidence sources reviewed noted that the current system of wheelchair provision is too fragmented, with too little integration and unclear lines of accountability.

For example, one study from the British Healthcare Trades Association (BHTA) argues that the system for the provision of mobility equipment to disabled children leads to confusion over which body is responsible for particular pieces of equipment as the legal obligation to provide equipment to children is split between several local bodies.⁴⁴ Local authorities are responsible for the provision of equipment for daily living and

⁴⁴ *The economic benefits of better provision of equipment for disabled and terminally ill children* . BHTA, 2014.

non-medical needs, such as equipment required in schools to facilitate access to education. CCGs are responsible for the provision of equipment that is specifically for medical or nursing purposes, including wheelchairs and specialist buggies. This provision model is defined by the BHTA as “*fragmented and non-systematic at best*”.

Existing evidence has noted that there is a lack of a sole body with the power and resources to provide equipment. This was suggested to be why children frequently do not receive adequate provision, resulting in charities or families supplementing the gaps in provision. As a result, there is evidence that charities have faced increasing numbers of applications for funding.⁴⁵ This was corroborated

Our **qualitative engagement** highlighted examples of commissioners and providers pooling funding across local services, such as education, social care and housing services.

We explored pooled funded models in-depth as part of our engagement, and our findings are outlined below.

CASE STUDY: POOLED FUNDING MODELS



As part of the case study on pooled funded models, we explored the following questions:

- How frequently pooled funded models are adopted in CCGs?
- What are the potential benefits of pooled funded models?
- What are the barriers to developing pooled funded models?

The current adoption of pooled funded models

We found a number of examples of commissioners adopting pooled funded models. Some commissioners linked the development of pooled funded models to the introduction of Personal Wheelchair Budgets. Commissioners interviewed suggested that the collaboration and integration between different services have significantly improved since the introduction of Personal Wheelchair Budgets as they facilitate the movement of funding across different services.

However, commissioners also suggested the current system is still a long way from having a common pooled budget collaboratively managed across different services.

The potential benefits of pooled funded models

A number of commissioners interviewed described the benefits of being able to pool funding with local services, such as education and housing services. They argued that this had enabled them to provide better equipment than they would otherwise and to create a more efficient allocation of resources. As a result, services can offer equipment catering for more than the clinical needs of a user, including wider holistic needs. One commissioner discussed how the ability to pool funding between education and wheelchair services meant that a student could be provided with a powered wheelchair. This, in turn, led to savings as less teaching assistant time was needed for that student, as well as improved user experience through increased independence. Another commissioner highlighted how pooled funding allows for more users to access additional adjustments to their equipment, such as risers that enable users to have conversations at eye-level and to conduct other day-to-day activities, increasing the social benefits of the equipment.

Barriers to developing pooled funded models

Both care providers and CCGs highlighted a number of barriers to adopting pooled funded models:

⁴⁵ *From the Front Line: Reporting on the UK's disabled children's equipment provision.* BDF Newlife (2012)

- Pooled funded models place additional work on a constrained workforce. Pooled funded models require a significant time investment from providers of care and commissioners to identify the right people to talk to across multiple different organisations (education, housing, social care). Therefore, we were told that good practice that has been established is often the result of individuals going above and beyond requirements.
- Some stakeholders have encountered resistance from other services to develop pooled funded models. This, again may be driven by time constraints rather than an unwillingness to engage.

Integration *across* wheelchair services

Integration *across* wheelchair services relates to the levels of interaction and coordination between different CCGs in order to provide a homogenous service.

As part of our **qualitative engagement**, multiple stakeholders interviewed highlighted to us the lack of a central body with overall responsibility for wheelchair services and the corresponding lack of integration across CCGs. Individual CCGs can create their own wheelchair service with levels and quality of service tailored to users. However, this can give rise to a “*post-code lottery*”, with significant geographic variation across services.

We also found that fragmentation poses challenges for stakeholders who are engaging with wheelchair services. For example, a manufacturer of equipment suggested that the lack of centralisation means they need to engage with each CCG individually. This results in potential economies of scale being missed.

The **qualitative engagement** suggested numerous ways that there could be increased integration or coordination across CCGs, which ranged in-depth and the type of integration. However, we found a mixed picture on the extent to which stakeholders wish to pursue the different types of integration.

- **Increased shared learnings and collaboration through regional networks.** Regional networks were highlighted by providers as a mechanism to create consistency across CCGs and share best practices and learnings for implementing policy change.
- **Standardisation of the eligibility criteria and prescription equipment.** There are different views across stakeholders on the levels of standardisation that should be achieved across wheelchair services. This is explored as part of the case study below.
- **Centralisation of specific aspects of wheelchair provision.** We found examples of regional coordination in order to provide specific aspects of wheelchair provision, such as powered wheelchairs and repair and maintenance services. This regional and coordinated approach has the advantage of pooling resources across areas and providing greater flexibility and cover when there is high workforce turnover. These types of models may also allow for easier career progression and learning and development for service staff if, for example, one organisation employs multiple rehabilitation engineers who can learn from each other and work across multiple CCGs. It may be that the move towards Integrated Care Systems in the coming years facilitates more of this integrated work style.

As part of our qualitative engagement, we conducted a deep dive into regional networks and the standardisation of the eligibility criteria. Our findings for these case studies are presented below.



CASE STUDY: WHEELCHAIR NETWORKS

We identified two key networks for the provision of wheelchairs: regional managers wheelchair networks and the national wheelchair manager forum. As part of this case study, we explored the following questions:

- What is the current role of wheelchair networks in the provision of wheelchair services?
- What are the current barriers for wheelchair networks?
- What are the potential additional benefits of wheelchair networks?

The current role of regional wheelchair networks

A number of stakeholders highlighted the role of regional networks in harnessing collaboration across CCGs, sharing learnings, and developing best practices:

- **Regional networks have been used as a mechanism for service managers to benchmark their services against other comparable services.** Through regional networks, care providers (including clinicians) have been able to develop and share best practice guidance around new policy initiatives, in particular in relation to Personal Wheelchair Budgets.
- **Regional networks have provided a forum to develop and test new innovative pathways.** A provider of care highlighted how they adopted an over the phone rather than face-to-face triaging process following engagement with a regional network. This allowed the provider to have a smoother and more efficient triage process and ultimately benefited users.
- **Regional networks have been used in areas to drive improvements to standardise the eligibility criteria** for services for specific user types (such as users with spinal injuries). One provider of care outlined how regional networks allowed for coordination of the eligibility criteria across regions and allowed the creation of a standardised matrix of equipment across wheelchair services. This matrix was discussed with a manufacturer and resulted in reduced waiting times for users.

Barriers for wheelchair networks

Stakeholders highlighted how the current scope and effectiveness of wheelchair networks depend on the voluntary participation of individuals. Some stakeholders suggested that wheelchairs networks have historically been an effective mechanism for change but have gradually reduced their effectiveness. It is not mandated for commissioners or providers of care to participate in regional networks. One stakeholder commented that it is often a similar group of individuals attending regional network meetings, and better collaboration and shared learnings would be created if a wider set of individuals (e.g., across more CCGs and provider types) were encouraged to be active participants.

We found evidence that managers from private providers are less willing to participate in regional networks in comparison to managers from public sector providers.⁴⁶ This was linked to the different incentives for private and public providers and a perception that public and private sector providers are in competition against one another.

Potential further benefits of regional wheelchair networks

There was a clear view expressed by multiple stakeholders that further collaboration could be achieved through regional wheelchair networks. In particular:

- **Wheelchair networks could be an additional forum to better understand user views and experiences.** A number of stakeholders suggested that user groups are often not represented within

⁴⁶ We understand that there are examples of private providers creating their own networks across the services that they provide.

regional networks, but have the potential to provide an avenue for users to influence the characteristics of the services offered. The networks could act as a means to share learnings on responding to and incorporating feedback in services.

- **Wheelchair networks were suggested to be a means to standardise outcomes across services.** A stakeholder suggested how regional wheelchair networks in particular have the potential to be effective forums to develop regionally consistent eligibility criteria. These can then be refined by individual providers in order to tailor for the local context.

CASE STUDY: ELIGIBILITY CRITERIA



The eligibility criteria set by the NHS services determine whether an individual can access provision and will influence the types of care and equipment received by an individual. As part of the case study on eligibility criteria, we explored the following research questions:

- How are the eligibility criteria developed within and across CCGs?
- Any issues with the current eligibility criteria?
- Whether there are potential benefits to standardising the eligibility criteria?

Current development of the wheelchair eligibility criteria

The Model Wheelchair Service Specification provides guidance for CCGs to develop their eligibility criteria. However, this guidance is non-mandatory, and as a result, there is variation across the eligibility criteria adopted by CCGs. This has implications for the consistency of wheelchair services provided, with individuals in different CCGs eligible for different equipment.

The stakeholder engagement did find examples of collaboration across CCGs in order to improve the standardisation of the eligibility criteria across CCGs. For example, we found that in some areas, the eligibility criteria are first discussed and set at a regional level. Following this, a CCG will then tailor the eligibility criteria for the specific local context. We also found evidence of discussions of the eligibility criteria in the National Wheelchair Management Forum, where issues around achieving greater standardisation were expressed.

Issues with current eligibility criteria

Providers of care highlighted how the NHS eligibility criteria are focused on clinical needs for mobility rather than wider social and psychological needs. As a result, there are often gaps between what the NHS services are funded to provide and the expectations of the user. A provider suggested that this gap often results in criticism of eligibility criteria. However, other stakeholders suggested there are aspects of the eligibility criteria that result in overly high thresholds for receiving particular items of equipment. For example, a number of stakeholders suggested that the eligibility criteria are too high for powered wheelchairs, while others suggested there are unnecessary eligibility restrictions for people with currently low needs, but whose condition will deteriorate in the future.

There were some suggestions across stakeholders that the eligibility criteria are adjusted in order to match the budgets available rather than reflecting clinical needs. For example, it was suggested that some CCGs no longer offer occasional use chairs in order to meet funding requirements. However, stakeholders suggested the extent this occurs depends on the relationship providers have with CCGs. Where there are effective relationships between CCGs and providers, it may be possible to build more flexibility.

Benefits to standardising the eligibility criteria

A number of benefits to standardising the eligibility criteria across multiple areas were identified.

- Ensuring that individuals with the same levels of mobility are eligible for the same equipment across CCGs is expected to reduce variation in service outcomes.
- There are potential economies of scale to be unlocked through standardisation. Standardisation of the eligibility criteria has the potential to create greater clarity for manufacturers over the types of equipment that would be required across users. This has the potential to create efficiencies in manufacturing processes, creating economies of scale.

However, tension was identified between standardising the eligibility criteria and the flexibility of the service to meet user needs. Stakeholders suggested this trade-off is more likely to exist where the eligibility criteria are directly linked to the portfolio of equipment that is offered to the user. It was suggested that the eligibility criteria and corresponding equipment should have enough flexibility for clinicians to be able to tailor the equipment to the needs of the user.

4.5 SERVICE FUNDING

Our qualitative engagement echoed findings from existing literature that current NHS services may not always be sufficiently funded to deliver quality services in every part of the country. CCGs have a statutory responsibility to commission healthcare services (including wheelchair services) that meet the reasonable needs of the persons for whom they are responsible. This should include securing public involvement in the planning of commissioning arrangements and in making decisions on changes in commissioning arrangements that would have an impact on service delivery.⁴⁷ Some of the qualitative evidence we have collected suggests that this is not occurring on a universal basis across the country.

- A number of stakeholders in the **qualitative engagement** suggested that NHS wheelchair services only cater for high needs due to budgetary pressures. For example, it was suggested that the eligibility criteria are adjusted in order to match the budgets available rather than reflecting clinical needs. As a result, there are users who would benefit from equipment but are left without equipment or find other means to fund equipment. This has the potential to result in deterioration for low- and medium-need users, resulting in significant compromises to user experiences and increased future costs to the NHS.
- Even for high-need users, we found evidence to suggest that NHS funding is often inadequate to meet the complex need of many users. NHS funded services may cover a basic wheelchair but not special seating support, specialist control systems and bespoke modification and adaptations. Under the Personal Wheelchair Budgets, the level of funding provided may not meet the costs of wheelchairs, which means individuals must make up the full cost of the wheelchair themselves. The equipment that is needed to go with the wheelchair is often an expensive add-on and can be a hidden cost on top of the initial pay-out.⁴⁸

The National Wheelchair dataset does allow us to analyse current expenditure on wheelchair services annually by CCG. In the latest wave of data available (third quarter of 2021-22), only 72 out of 106 CCGs declared how much they are spending annually on wheelchair services (68% response rate). For this sample of CCGs, annual expenditure on wheelchair services is in a range between £30,000 and £6,370,000, with an average expenditure of £1.6m and a total expenditure of £115m. This variation will largely be driven by the size of each service.

⁴⁷ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/216555/dh_134569.pdf

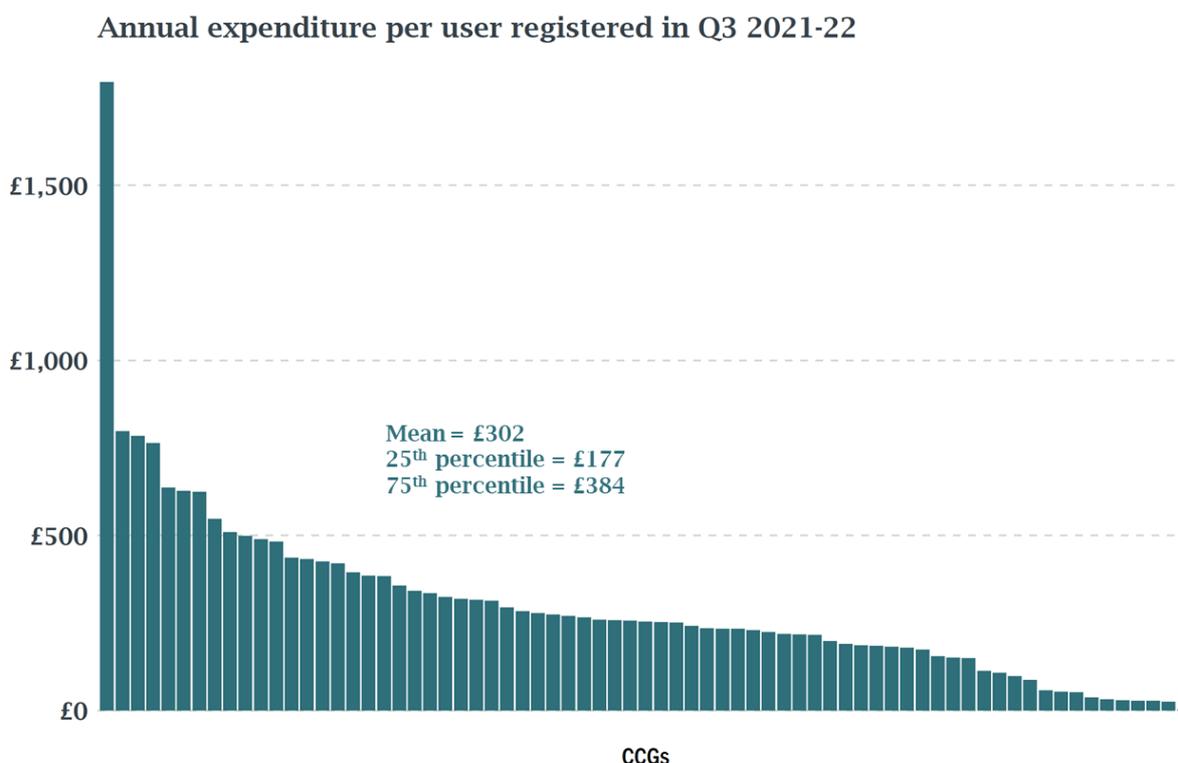
⁴⁸ *The case for effective wheelchair services*. Get Moving, 2013

However, we also found substantial variation in expenditure per user registered in the service, with some services reporting spend of over £500 annually on each user registered while other services spend less than £100.

Some of this variation in expenditure per user can be explained by differences in local priorities and case mix. It may also reflect the fact that we are comparing an annual “flow” figure (spend per year) with the “stock” of users registered in each CCG. CCGs who have a higher proportion of “new” users requiring significant care in that period will have higher expenditure than those with a relatively low flow of new “users”.⁴⁹

We were also told during our qualitative engagement that different CCGs report expenditure in different ways, which limits the extent to which we can interpret any differences. For example, we were told that some CCGs who operate a mixed model (some in-house delivery and some outsourcing) may only include the fixed outsourcing spend in the data and not their in-house expenditure, which is less defined.

FIGURE 21 ANNUAL EXPENDITURE PER USER REGISTERED IN QUARTER 3 OF 2021-22 BY CCG



Source: Frontier Economics analysis of the National Wheelchair Dataset

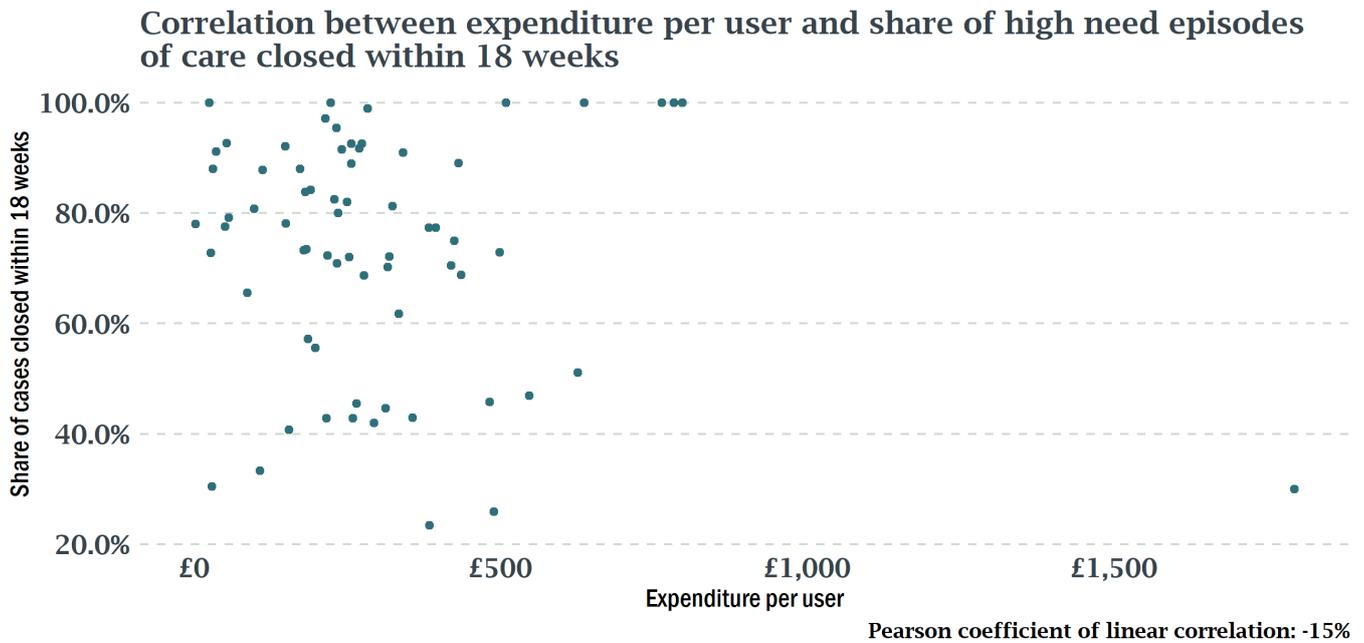
Overall, there is some tentative evidence of differences in the extent different CCGs invest in wheelchair services.

⁴⁹ We also expect that the variation is partially driven by inconsistencies in data reporting that were highlighted as part of our qualitative engagement.

We do not find a clear quantitative relationship between expenditure per user and waiting times across CCGs (see Figure 22). However, it is possible that a relationship is not observed in this case because the CCGs differ in many characteristics that confound this relationship. A simple correlation measure cannot successfully “isolate” the impact of spend per user from the impact of other factors.

FIGURE 22 CORRELATION BETWEEN EXPENDITURE PER USER REGISTERED AND WAITING TIMES

[Insert Source here]



Source: Frontier Economics analysis of the National Wheelchair dataset

Note: The National Wheelchair Dataset does not classify all users registered by type of need. Only new and re-referred users whose episode of care was closed in the reporting period are reported by type of need. We use the proportion of new and re-referred users whose episode of care was closed in the reporting period who are classified as high need as a proxy of the overall proportion of high need users

4.6 OVERALL IMPLICATIONS FOR SERVICE OUTCOMES

We find that the current approach to wheelchair provision has a number of important implications for service outcomes. We find variation within and across services leads to both inconsistencies in services offered and significant and varying waiting times. Each of these implications is explored further below. In section 6, we discuss the implications of the identified service outcomes for users of wheelchair services.

Inconsistencies in service quality

This section has outlined variations in investment in wheelchair services across the country and different models that can be adopted by CCGs for wheelchair services. These differences may be linked to inconsistency in service quality across different CCGs. Commissioners in England are able to develop their own eligibility criteria, the definition of priorities and the pathway. This means that two neighbouring services can have different criteria or waiting times.⁵⁰ Different wheelchair services have resources available to fund wheelchairs, and there is a dependency on the workforce to go above and beyond in order

⁵⁰ Wheelchair services - Costed Scenarios for the Motor Neurone Disease Association. Civis, 2010

to develop a joined-up service provision that focuses on users' holistic needs. As a result, there are often discrepancies in service quality across CCGs and the ability of users to access equipment.

Significant waiting times

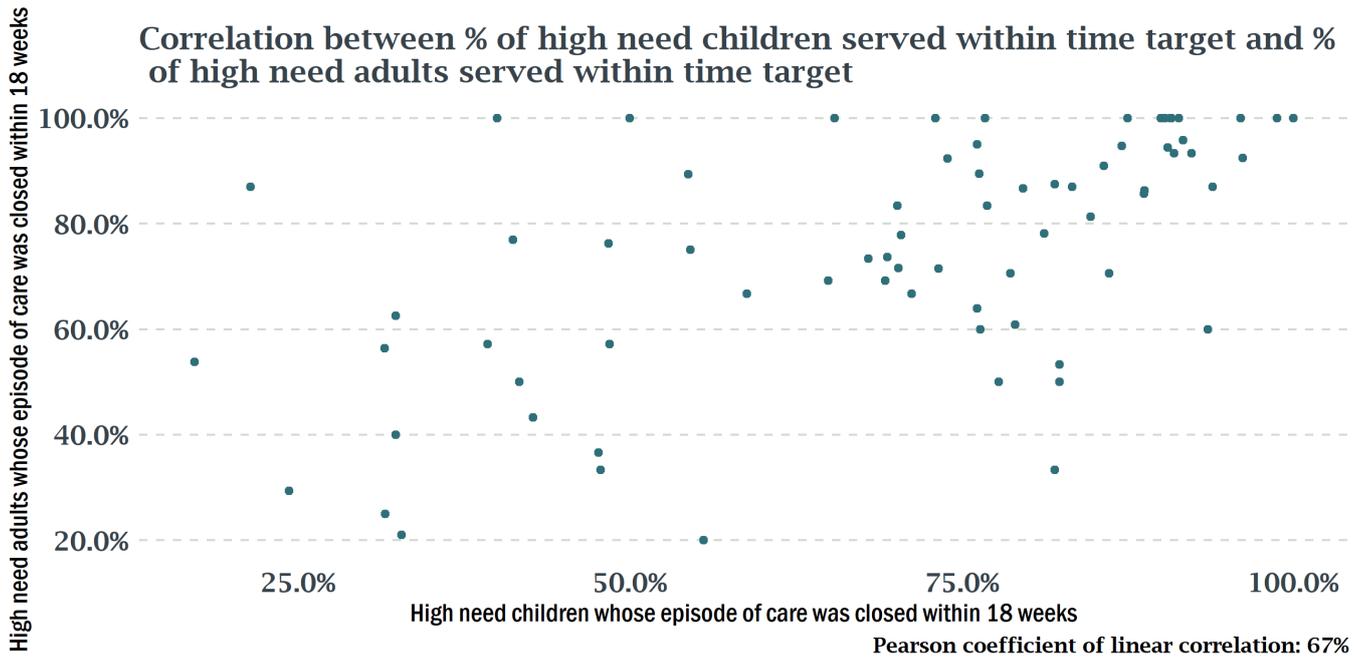
Long waiting times emerged as a common issue across wheelchair provision. Our analysis of the National Wheelchair Dataset finds that 75% of high need users' episodes of care were closed within the 18-weeks' time target in Q3 of 2021-22.

- Our **quantitative analysis** shows that there is significant variation across CCGs in meeting the waiting times standard.⁵¹ We examined the proportion of high need users whose episode of care was closed within 18 weeks (both adults and children) across different CCGs (see Figure 24). Some services achieved this target in the third quarter of 2021-22 for all their new and re-referred high need users, while others met those timescales for less than 25% of their high need users. Overall, almost two-thirds of CCGs meet the target for at least 75% of their high need users. However, we understand that the variation seen may be due to different definitions of the waiting time period used.⁵² We also find a positive correlation between the percentage of children and the percentage of adults whose episode of care is closed within the 18 weeks target, meaning that services that manage to close a high proportion of episodes of care within the time target for adult users, tend to do the same for children, and vice versa (see Figure 23).

⁵¹ NHS England has an 18-week standard waiting time target. NHS guidance requires CCGs to develop improvement plans to ensure that all children who require a wheelchair will get one within 18 weeks from referral. It is expected that CCGs will achieve 92% in relation to the 18-week Referral of Treatment standard waiting time for children.

⁵² Some commissioners interviewed suggested that data reported to NHSE&I are often inconsistent, particularly data on waiting times. It is possible that some services are reporting waiting times starting from assessment, while others are using referral as a starting point. Furthermore, it was suggested that some services "stop the clock" when events outside their control delay the equipment delivery, while other services do not use this option. Criteria to "stop the clock" are thought to be inconsistent across different CCGs.

FIGURE 23 CORRELATION BETWEEN WAITING TIMES OF ADULT AND CHILDREN USERS

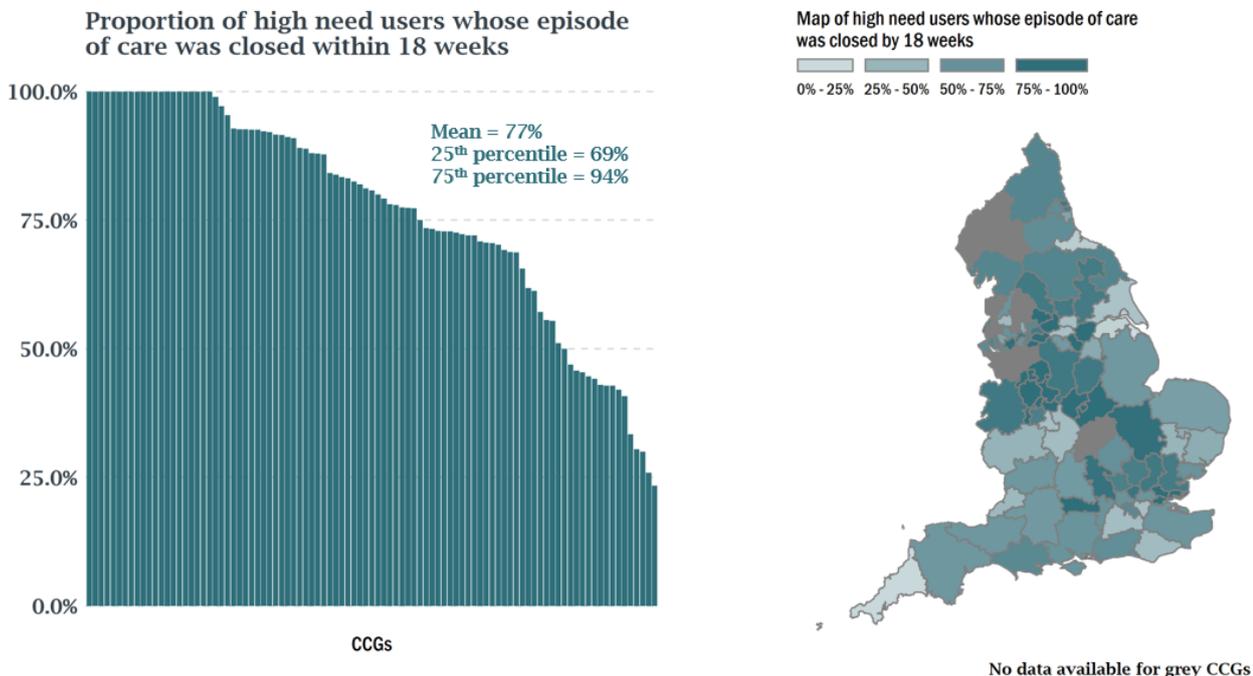


Source: Frontier Economics analysis of the National Wheelchair Dataset

- **The qualitative engagement found significant variation in waiting times *within* CCGs.** We found many examples across the user groups conducted of individuals waiting for more than six months for equipment, with limited communication between the user and wheelchair services during this period. However, other users in the same locality had a much better experience either because they entered via a different referral pathway or engaged with different individuals in the service.
- **Communication issues are likely linked to the significant waiting times.** We found that poor communication by many wheelchair service providers to users exacerbated the negative impact of delays (which were sometimes unavoidable given specialist requirements).

FIGURE 24 PROPORTION OF HIGH NEED USERS WHOSE EPISODE OF CARE WAS CLOSED WITHIN 18 WEEKS BY CCG – Q3 2021-22

[Insert Source here]



Source: Frontier Economics analysis of the National Wheelchair dataset

Note: The National Wheelchair Dataset does not classify all users registered by type of need. Only new and re-referred users whose episode of care was closed in the reporting period are reported by type of need. We use the proportion of new and re-referred users whose episode of care was closed in the reporting period who are classified as high need as a proxy of the overall proportion of high need users

5 FINDINGS: MARKET FUNCTIONING

5.1 KEY MESSAGES

This chapter explores how the market for wheelchair provision functions, particularly focusing on: the supply and demand dynamics (i.e., whether there is sufficient competition, and whether users can obtain the equipment they require equitably), whether there are any concerns around the distribution of market power in wheelchair provision, and the levels of innovation in the sector.

We have summarised the findings of this section and linked the findings to the key economic concepts in Table 11.

TABLE 11 KEY FINDINGS: MARKET FUNCTIONING

ECONOMIC CONCEPT	FINDINGS
 Asymmetric information	<ul style="list-style-type: none"> ■ The fragmentation of services across CCGs has led to limited transparency about costs paid for equipment and other aspects of wheelchair services across CCGs. As a result, we found suggestions that this could result in significant market power for wheelchair manufacturers and limit the ability of CCGs to accurately assess tender processes, particularly for service provision. ■ A number of stakeholders highlighted that users are not always in the position to determine whether they have received a sufficiently high-quality service. This creates the potential for users to be exploited, particularly when opting to self-fund equipment in the private sector or using a grant from a charity provider. ■ There are limited avenues for users to provide feedback on the quality of service received, resulting in reduced mechanisms for providers of care and CCGs to identify gaps in the services offered.
 Incentives	<ul style="list-style-type: none"> ■ The gaps in the services offered by the NHS have incentivised the growth of alternative private or charitable sector sources for wheelchair equipment. NHS provision of wheelchair services may have critical gaps in certain areas of the country (e.g., for powered wheelchairs), resulting in unmet demand. Wheelchair users have been incentivised to source equipment outside of NHS provision, such as through charitable funding or self-funding. As a result, we find evidence to suggest the increased role of the retail sector in the provision of wheelchairs. ■ Stakeholders highlighted gaps in the current regulation of wheelchair services and suggested the following improvements to the regulation of the sector: <ul style="list-style-type: none"> (i) The reporting of equipment faults. Stakeholders highlighted the importance of quality checks on the equipment of wheelchairs, which are overseen by the Medicines and Healthcare products Regulatory Agency (MHRA). These checks result in providers receiving quality alerts if there is

ECONOMIC CONCEPT	FINDINGS
	<p>faulty equipment. However, a provider questioned how accurate these alerts are as they are infrequent and are aware that not all wheelchair services know how to alert any issues. It was also suggested that there is evidence of underreporting by suppliers.</p> <p>(ii) More rigorous mandated regulation through a body such as the Care Quality Commission (CQC). Stakeholders suggested that additional CQC regulation for wheelchair services outside of existing CQC regulations would help address the gaps in accountability, guarantee a minimum standard of quality and thereby improve consistency within and across CCGs.</p> <p>(iii) Regulation of retailers. User groups and a retailer suggested that the current regulation by the British Health Trades Association (BHTA) is not always sufficient to protect user groups. A retailer suggested the need for additional checks and standards across the sector.</p> <p>(iv) An independent complaints body. All stakeholders highlighted the limited influence of users in the approach to service, the services offered, and their ability to raise concerns with care practices. However, it was noted this may be due to a lack of awareness of existing routes to raise complaints too.</p>
 <p>Market power</p>	<ul style="list-style-type: none"> ■ Stakeholders suggest that the manufacturing of wheelchairs is dominated by two parties, with a number of smaller manufacturers providing more niche specialised equipment. We do not find evidence of manufacturers exploiting their position. However, this may be due to limited evidence available. ■ We do find evidence of users paying a higher unit price for equipment when obtaining in the private retail sector compared to the unit price paid by the NHS. This is, in part, related to the additional services that a user will be offered if they go to a private provider, such as assessment and expertise, in addition to the equipment and the purchasing power of the NHS versus a retailer. However, we also find potential for certain individuals, particularly those with high needs, to be exploited. Across a wide range of stakeholders, concerns were raised around unethical behaviour in the retail provision of wheelchairs, in particular, that high-need users will pay a significantly higher price. ■ We found evidence of private providers of services having significant market power, which was linked to the lack of competition from public providers of care in tendering processes, in particular CCGs where competition is private-sector led. We also found examples of where services had been re-tendered and the incumbent provider won the contract, despite the service previously provided not being satisfactory.
 <p>Innovation</p>	<ul style="list-style-type: none"> ■ We found mixed views on the extent that innovation occurs in wheelchair provision and the extent that innovation ultimately results in an improvement to the experiences of wheelchair users. As we defined previously innovation covers both product innovation and the development of new ideas to improve wheelchair services and provision. We found

ECONOMIC CONCEPT	FINDINGS
	evidence of innovative equipment being produced by manufacturers. Stakeholders in the qualitative engagement suggested that the levels of funding available for NHS wheelchair services are insufficient to encourage innovation in terms of the practices adopted and the equipment administered.

5.2 SUPPLY DYNAMICS

Our **qualitative engagement** found that the number of players in the provision of wheelchairs is evolving across manufacturers of wheelchairs, wheelchair retailers and providers of care.

- **Manufacturers.** Interviewees suggested that there are two key wheelchair manufacturers. These providers were suggested to be ‘one-stop-shop’ providers, i.e., they provide a wide range of different wheelchairs to meet a range of different needs, from more standardised equipment to more specialised equipment. Interviewees did highlight a number of smaller manufacturers who focus on more specialist equipment. However, they suggested that merger and acquisition activity in the sector has resulted in an overall reduction in the number of competitors in the market. As a result, a number of stakeholders expressed the desire for increased competition in the manufacturing sector for wheelchairs.
- **Providers of care.** There was a mixed view among commissioners on whether there is healthy competition when tendering wheelchair services. Some suggested that multiple high-quality bids were received. Others highlighted insufficient engagement with tenders. However, commissioners noted that public-sector providers of wheelchair services were not always able to provide services in a number of regions. As a result, competition in some areas is private-sector led. We also found examples of where services had been re-tendered and the incumbent provider won the contract, despite the service previously provided not being satisfactory.
- **Retailers:** many stakeholders commented on the growth of the retail provision of wheelchairs (i.e., where individuals are purchasing wheelchairs privately from the retail sector), including a retailer themselves, commissioners, providers of care, and user groups. It was suggested that this growth in retailers is in a small number of retailers rather than through new entrants to the market. This was corroborated by the quantitative analysis in section 0.

The qualitative engagement suggested that it is difficult for users to assess or be able to complain about the quality of care received. As a result, competition in the sector is generally based on price rather than a combination of price and quality of care. This focus on price occurs at a number of stages in wheelchair provision.

- **Equipment provided by the NHS.** Wheelchair users and charities suggested that equipment provided by NHS wheelchair services is often chosen due to the price point. Some stakeholders suggested that this is due to funding constraints.
- **Retail provision of wheelchairs.** A retailer commented that competition in the market has resulted in adverse implications for wheelchair provision; the retailer commented that: “*Wheelchair services is a market where normal market competition is not desirable.*” An increase in competition has resulted in pressures to decrease the price of services, which has occurred at the expense of quality. The stakeholder suggested that this has been driven by the lack of regulation in retail provision and users who may not be aware that they have received a sub-quality service or are not

able to highlight examples of poor practice due to the lack of an appropriate body. This applies to individuals who self-fund the purchase of wheelchair equipment and those who utilise NHS personal wheelchair budgets.

- **Providers of care.** A provider of care highlighted that the drive of commissioning for value for money is placing financial pressures on the delivery of services. They suggested that some CCGs are more flexible than others at adjusting for unexpected financial pressures. However, this results in compromises in services delivered in some areas.

A number of stakeholders, including a retailer and user groups, suggested the benefits of charity schemes for powered wheelchair as a mechanism for maintaining quality where there are competitive pressures in the retail provision of wheelchairs. For example, a charity scheme pays retailers a value, which is fixed depending on the category of equipment.⁵³ This value is independent of the specific type of equipment provided to the user. The scheme monitors the performance of retailers to ensure key performance metrics are adhered to, and if they are not, they will be removed from the scheme. Together this results in reduced incentives for retailers to compromise the quality of the service and reduced incentives for retailers to engage in a ‘race to the bottom’ on price. This shows the potential of innovative payment systems in promoting quality incentives in wheelchair provision.

5.3 MARKET POWER

The **qualitative engagement** highlighted the variation in market power across the stakeholders involved in wheelchair services.

- **We do not find evidence of manufacturers exploiting their position.** Some stakeholders suggested the potential for manufacturers to exploit the lack of centralisation and transparency across CCGs by pricing equipment differently across CCGs. Other stakeholders suggested that prices with manufacturers were negotiated nationally through NHS purchasing hubs. However, we were told by a manufacturer that they do not vary the price of equipment for different CCGs in the NHS or for private retailers. We were not able to independently verify this as part of our work. CCGs may, in practice, pay a different price per unit of equipment, as the price paid to manufacturers depends on the volume of equipment that a CCG is purchasing. This was corroborated by a commissioner.
- **We do find clear evidence of users paying a higher price for equipment in comparison to the NHS.** A **retailer** who is selling a wheelchair to a user will charge a mark-up in order to reflect the services that they provide, such as an assessment of the user’s needs. As a result, an individual who is purchasing from a retailer will pay a higher price than the NHS: an individual will not buy in the same volume as the NHS, and they are not able to purchase directly from a manufacturer.
- **We do find potential for certain individual users to be exploited.** This was suggested with reference to the retail provision of wheelchairs. This is explored further as part of the regulation case study below.

Stakeholders identified links between the market power of stakeholders, particularly users, and the regulation in the sector. This was explored as part of a case study in wave 2 of the qualitative engagement, for which our findings are described below.

⁵³ <https://pws.motabilitydealer.co.uk/dealerships/rewards-1>

CASE STUDY: REGULATION



The regulation case study answers the following questions:

- What is the current scope and effectiveness of regulation in wheelchair provision?
- How effective are the current levels of regulation? Are there any critical gaps?
- Should there be any changes to the regulation of wheelchair provision? And if so, what should these be?

Current scope and effectiveness of regulation

The potential scope of regulation in wheelchair provision is broad due to the number of stakeholders, stakeholder relationships and aspects of wheelchair provision that could be regulated. Relationships that could be regulated include providers and CCGs, users and providers, users and retailers, manufacturers and CCGs, among others.

We found that the key aspects of the current regulation of wheelchair provision consisted of the following:

- The **Model Service Specification** aims to provide guidance on the role, function and responsibilities of wheelchair services. However, it is non-mandatory in nature and therefore does not provide a consistent means of regulating services provided across CCGs.
- There is **regulation on the workforce**. For example, therapists and rehab engineers are covered by their own governing bodies. However, this is not the case for all aspects of the workforce, such as technicians.
- The key element regulating relationships between **CCGs and providers of care** is the data required in the **National Wheelchair Dataset**. This provides accountability for providers against waiting time standards and, in theory, provides the information by which services across CCGs can be benchmarked against one another. However, stakeholders suggested that the relationships between CCGs and providers are on a trust basis rather than through formal checks and balances. It was suggested by multiple providers that it is their responsibility to conduct their own internal audit of the services they offer and collect measures beyond those mandated in the National Wheelchair Dataset.
- There are **quality checks on the equipment of wheelchairs**, which are overseen by the Medicines and Healthcare products Regulatory Agency (MHRA). These checks result in providers receiving quality alerts if there is faulty equipment. However, a provider questioned how accurate these alerts are as they are infrequent and are aware that not all wheelchair services know how to alert any issues.
- We found **examples of a standards body monitoring commissioning, provision and clinical aspects of services**. However, the scope of this regulation was not clear to stakeholders, and many stakeholders were not aware of such bodies.⁵⁴
- We found **limited examples of checks and balances that users have on wheelchair service providers or CCGs**. CCGs were found to have limited direct contact with users, except through local user groups. Wheelchair Service providers of care were suggested not to have clear formalised complaints processes.
- **Retailers are regulated by the British Health Trades Association (BHTA)**. However, a retailer and user groups suggested that the BHTA **do not currently provide effective retail regulation**, with no checks performed from the BHTA on the retailer interviewed. As a result, across a wide range of stakeholders there were clear concerns around unethical behaviour in the retail provision of wheelchairs, in

⁵⁴ See CECOPs: <http://www.cecops.org.uk/>

particular that high need users will pay a significantly higher price than others due to information asymmetries.

Recommended changes to regulation

A wide range of changes to regulation in wheelchair provision was suggested in order to improve service outcomes. These are outlined below, and explored further as part of section 8.

- **Regulation of providers of care.** Many stakeholders suggested that wheelchair provision should be further regulated by the CQC or a similar national body. Wheelchair services are regulated by the CQC if they are within the remit of CQC regulation for an NHS Trust. As a result, private providers of wheelchair services that sit outside of NHS Trusts are not directly CQC regulated. It was suggested that CQC regulation would help address the gaps in accountability, guarantee a minimum standard of quality and thereby improve consistency within and across CCGs. This was suggested to be particularly necessary given that the Model Service Specification has not created the change required in wheelchair provision.
- **Regulation of retailers.** We found the potential for users to be exploited within the retail sector. The equitable performance of the retail sector is particularly important as, due to the gaps in NHS provision, users are driven to obtain equipment privately. As a result, stakeholders highlighted the need for more effective regulation of the retail sector.
- **Independent complaints body.** All stakeholders highlighted the limited influence of users in the approach to service, the service they are offered, and their ability to raise concerns with care practices. User groups in particular highlighted a desire for a body to raise concerns with wheelchair provision, such as a watchdog or ombudsman institution. However, it was noted that in many CCGs, these forums already exist, but users may not be aware of the existing bodies. Therefore, stakeholders suggested the need for better information on existing complaints avenues.

Stakeholders suggested that for regulation to be effective, it would need to acknowledge the different approaches to wheelchair provision across CCGs.

5.4 INNOVATION

The **qualitative engagement** suggested a mixed view on the extent that innovation occurs in wheelchair provision and the extent that innovation ultimately results in an improvement to the experiences of wheelchair users. Our findings are summarised in Table 12.

TABLE 12 INNOVATION IN WHEELCHAIR PROVISION

THE CURRENT APPROACH TO PROVISION HARNESSSES INNOVATION	THE CURRENT APPROACH DOES NOT HARNESS INNOVATION
<ul style="list-style-type: none"> ■ There are examples of innovative care practices within CCGs, such as pooled funding models and collaboration across regional networks. However, this has tended to rely on individual commissioners and wheelchair service practitioners going above and beyond. ■ There have been innovations in wheelchair equipment that have allowed for a more 	<ul style="list-style-type: none"> ■ There is too much focus on cost-effective care over and above innovation. As a result, the levels of funding are not sufficient to encourage innovative care across wheelchair provision. ■ The fragmentation of wheelchair services results in ineffective procurement of

holistic approach to care. For example, wheelchair seat risers where the height of the wheelchair can be changed.

- **Competitive tenders** means that the NHS access innovations in the private sector provision.

equipment, which is not sufficiently user-focused.

- There were suggestions by a number of stakeholders that **manufacturers do not offer their most innovative products** to the NHS.
- Relatedly, there were concerns raised amongst stakeholders as to whether the **NHS is willing to purchase innovative equipment**.
- Stakeholders suggested a **lack of innovation for particular types of equipment**, such as **children's wheelchairs**.
- Some stakeholders suggested that the innovations seen often are not effective in improving the quality of individual's lives, i.e., they are **not sufficiently user-focused**.
- It is often difficult for users to access innovations that do not directly have any clinical improvements. For example, innovations that allow for **improvement in social interactions**.

6 FINDINGS: USER IMPACT

This chapter focuses on how the functioning of wheelchair services impacts the quality of care received by users. This includes users' perceptions of service equity as well as the communication channels provided to users.

Overall, we find that wheelchair services play a vital role in many aspects of people's lives. NHS and wider provision allow individuals with mobility needs to have increased independence. However, we find clear concerns across stakeholders over service equity and user fairness. We found examples of where users are left without adequate equipment, leading to self-funding of permanent or temporary equipment. We also found examples of users being unaware of how and where to access services. Further, users are unsure of where to report feedback and wider concerns with wheelchair provision. Together, these impacts can have significant implications for users of wheelchairs and their carers, leading to a reduction in independence and reduced quality of life.

We have summarised the findings of this section and linked the findings to the key economic concepts in Table 13.

TABLE 13 KEY FINDINGS: IMPACT ON END-USERS

ECONOMIC CONCEPT	FINDINGS
 Asymmetric information	<ul style="list-style-type: none"> We found limitations to the assessment process resulting in information gaps between: (i) users and providers of services and (ii) different service providers (e.g., GPs, therapists and equipment providers). As a result, the equipment provided to some users may not be sufficiently tailored to individuals' and carers' needs.
 Incentives	<ul style="list-style-type: none"> Stakeholders identified a number of critical gaps in service provision. These gaps included a lack of provision of powered wheelchairs and maintenance. These gaps, alongside long and often unexplained waiting times, have led to some users self-funding permanent or temporary equipment. The self-funding of equipment was found to have wider consequences for users and carers, such as increased financial constraints on households. We were told of communication issues that occurred during the initial process of providing an individual with equipment. For example, users told us that there might be limited rationale provided for the prescription of certain equipment types. There are also limited communication channels for users to influence provision (such as a feedback mechanism for users to highlight concerns with providers of care or CCGs).
 Market power	<ul style="list-style-type: none"> Multiple stakeholders interviewed highlighted inconsistencies in wheelchair services across the country, including in access to care and equipment. These were identified to be both across CCGs and within CCGs. Users suggested that within CCGs it is <i>“those who shout the loudest, get the care.”</i> This suggests varying levels of influence across users.

6.1 SERVICE QUALITY

Our qualitative engagement and our review of existing evidence highlighted significant questions regarding the quality of some NHS wheelchair services. In particular, concerns were raised regarding the quality of assessment processes, gaps in provision and significant unexplained waiting times.

Quality of the assessment process

Existing evidence has noted inadequacies in the assessment processes for wheelchair provision. In particular, assessments can be too general and unstructured. In some cases, the assessment may consider the varying needs of individuals and their lifestyles. For example, a lack of specialist clinical input into assessment processes has led to generic manual wheelchairs being inappropriately provided for people with muscle-wasting conditions.⁵⁵

This was corroborated by the user focus groups which we carried out. Users experienced a lack of coordination between physios, GPs, service providers and other therapists. This meant that users had to repeat themselves multiple times. Moreover, users often felt that providers did not show a sufficient understanding of the specifics of their condition and the constraints of their carers. As a result, on some occasions, the equipment provided was not sufficiently tailored to individuals' circumstances.

A wide range of stakeholders suggested the current issues with the assessment processes related to the pressures on wheelchair services and underfunding of NHS services. For example, we were told that there are significant pressures on the workforce, and Covid-19 has led to back-logs of users waiting to be assessed.

Gaps in NHS service provision

As part of the **qualitative engagement**, user groups and other stakeholders highlighted a number of critical gaps in NHS services.

- **Users had difficulty in obtaining particular types of equipment.** For example, individuals who believe that they are eligible and would benefit from a powered wheelchair were, in some cases, provided a manual wheelchair as they did not meet the narrow eligibility criteria.
- We also **identified gaps in wider aspects of care** beyond the direct provision of wheelchair equipment, such as follow-up appointments, re-assessment and equipment maintenance. This is in keeping with previous evidence, which concluded that 33% of users had received no training on how to use a wheelchair.
- Stakeholders and user groups highlighted a **limited consideration of carers and the knowledge and expertise that they have about users**. This results in incorrect equipment provided and inefficient processes.

Stakeholders suggested that individuals working in services are often working as hard as they can to meet users' needs, but that budget limitations have led to gaps in wheelchair services. Users stated that they believe some services are reluctant to promote their offering to the public as they will be unable to meet all needs within a finite budget.

⁵⁵ *Right chair, right time, right now* report.

Waiting times

As explored in section 4.6, our **quantitative analysis** shows that there is significant variation across CCGs in meeting the waiting times standard. Users provided powerful examples of how long waiting times had significant impacts on individuals and carers. These included children waiting ten months for delivery of equipment and a teenager remaining in a hospital because wheelchair services were not able to provide suitable equipment for them, even when provided with significant advanced notice. Users were, in many cases, aware that the provision of specialist equipment can take a long time. However, they often felt as though the underlying reasons for delays were poorly communicated. This exacerbated negative impacts on users and led to frustrations.

Waiting times for repairs and sourcing of component parts can also take a long time. Stakeholders suggested that the relatively narrow scope of the 18-week waiting time target masks the impacts arising from wider delays in wheelchair provision. For example, users highlighted long delays for receiving repairs to equipment or beginning the process for reassessment, neither of which is captured within the current waiting standard measure.

Self-funding of permanent or temporary equipment

We found in the **qualitative engagement** that the impact of gaps in services and long waiting times has resulted in the self-funding of permanent or temporary equipment for some users. This includes individuals opting for private purchases of powered wheelchairs when they were only offered a manual wheelchair by an NHS service and/or users purchasing a wheelchair lighter than their NHS provided wheelchair so that carers could more easily manoeuvre the wheelchair.

This was corroborated with findings from existing evidence: 24% of respondents to a survey run by Back-up stated that they bought a second wheelchair because their first one was uncomfortable. Furthermore, 50% of those surveyed said they bought a second wheelchair because of changing personal needs, suggesting that the current system is not addressing the issue.⁵⁶

The self-funding of equipment was found to have wider consequences for users and carers. In some cases, relatives and friends are taking time out from work to support users. This, in turn, results in additional financial pressures within households. Multiple stakeholders highlighted that self-funding of equipment places increased emphasis on the equitable functioning of other aspects of provision, such as the retail sector. This is discussed in section 5.3.

6.2 SERVICE INEQUITY

Multiple stakeholders interviewed highlighted inconsistencies in wheelchair services across the country, including in access to care and equipment. These inconsistencies were identified to be both *across* CCGs and *within* CCGs. A user group remarked that, within some areas, “*those who shout the loudest, get the care*”. There are examples of some users having an “outstanding” experience and others a poor experience despite having similar requirements and engaging with the same service. We found good experiences were characterised by clear communication across the different aspects of the user journey.

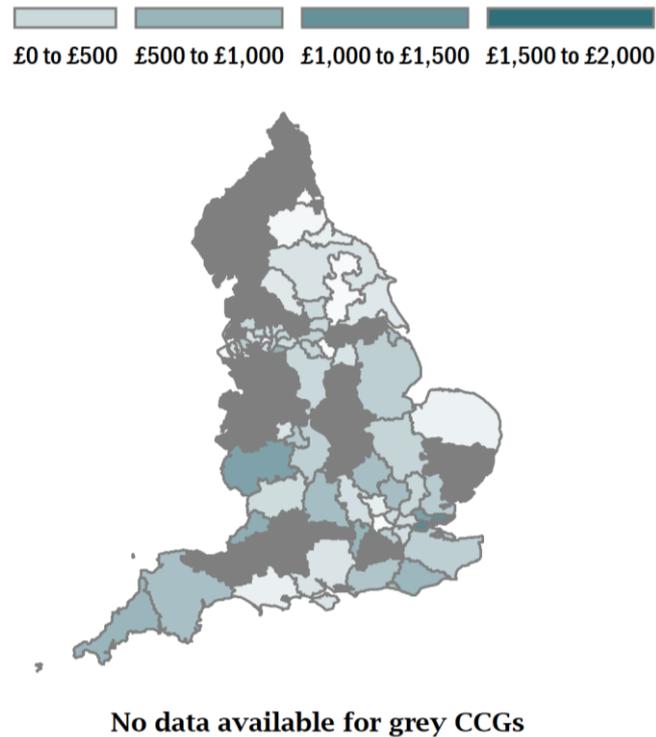
The inconsistencies in eligibility criteria, particularly the criteria for powered wheelchairs, across different areas were questioned by users. User groups highlighted instances of users with houses inappropriate for

⁵⁶ *Wheelchair user research 2017*. Back-up

powered wheelchairs (e.g., due to narrow hallways or doors) are not offered a powered wheelchair, despite a clear need for one outside the home.

As part of the **quantitative analysis**, we found a variation in annual expenditure per user registered with NHS wheelchair services, as shown in Figure 25. This corroborates the differential expenditure highlighted by users across NHSE&I.

FIGURE 25 MAP OF ANNUAL EXPENDITURE PER USER REGISTERED IN QUARTER 3 OF 2021-22 BY CCG



Source: Frontier Economics analysis of the National Wheelchair Dataset

6.3 COMMUNICATION BARRIERS

The **qualitative engagement** found two communication issues preventing the communication of user requirements in the provision of wheelchair services. These are communication issues during the initial process of providing an individual with equipment and a lack of communication channels for users to influence the approaches to wheelchair provision.

Communication issues during an individual’s experience in obtaining equipment

Communication issues relating to accessing equipment included:

- **Explaining the rationale behind the provision of certain equipment over other types of equipment.**
- **Providing context for delays that arise in the provision of their equipment.** This was suggested to be particularly important given current global supply chain difficulties.
- **Clarifying what services users are eligible for.** This includes whether an individual user qualifies for NHS services. As a result, users experience additional waiting times as they wait for service

providers to process their cases before eventually being rejected. Similarly, user groups identified examples of limited communication of NHS Personal Wheelchair Budgets by some CCGs.

- **Not involving carers in the process and drawing on their experience and expertise.**

Influence on the development of wider wheelchair provision

A range of stakeholders highlighted communication issues preventing users from influencing the wider provision of wheelchair services. These include the following.

- The **limited existence of feedback mechanisms** for users to highlight concerns with care and services provided by retailers and providers.
- The **lack of an industry watchdog** to escalate complaints about inadequate services.
- The **limited involvement and influence of user groups**, including in decision-making at CCG level.
- The **difficulty in identifying and maintaining relationships with key stakeholders given workforce turnover and organisational change**. Users noted the complexity in tracking responsibility for the provision of wheelchair services, which is exacerbated by organisational change at CCG level. This was seen to be critical for users to influence wider policy within their CCG and the procurement of services.

7 FINDINGS: IMPACT OF POLICY AND WIDER FACTORS

7.1 KEY FINDINGS

This chapter explores the impact of policy changes (the Model Wheelchair Service Specification, National Wheelchair Tariff, Personal Wheelchair Budgets and National Wheelchair Dataset), and the impact of wider factors, specifically Covid-19 and Brexit, on wheelchair provision.

We have summarised the findings of this section and linked the findings to the key economic concepts in Table 14.

TABLE 14 KEY FINDINGS: IMPACT OF POLICY AND WIDER FACTORS

ECONOMIC CONCEPT	FINDINGS
 Asymmetric information	<ul style="list-style-type: none"> ■ The National Wheelchair Tariff was designed to help improve the commissioning and provision of wheelchair services through improved tariff information.⁵⁷ Stakeholders suggested a mixed impact of the National Wheelchair Tariff in improving cost transparency of services. Some commissioners used the Wheelchair Tariff to estimate and benchmark the value for money of their own services. However, providers of care suggested a more nuanced view is required in categorising user needs and linking to categories included in the tariff may not always be possible given the range of potential user needs. ■ This National Wheelchair Dataset was designed to improve transparency and benchmarking and provides regular information at the CCG level on a range of indicators. It has enabled services and commissioners to compare their own offerings against others, which has in some cases led to subsequent discussions about key drivers of service quality. The data has also provided a means to develop transparency and accountability between commissioners and providers of care. However, we found the data has inconsistencies that limit comparability and are not always reflective of the on-ground experience.
 Incentives	<ul style="list-style-type: none"> ■ The Model Service Specification describes the role, function and responsibilities of commissioners and providers of NHS wheelchair services. However, the non-mandatory nature of the specification was suggested to limit the impact of the Model Service Specification. Many of the recommendations have not been consistently translated into practice across wheelchair services in England. It may be that local tailoring of the guidance to the needs of local populations has limited the potential benefits of consistency and standardisation.

⁵⁷ The NHS payment system for secondary healthcare is called the National Tariff. The tariff is a set of rules, prices and guidance that governs the payments made by commissioners to secondary healthcare providers for the provision of NHS services. More information on tariffs is available here: <https://www.england.nhs.uk/pay-syst/>

ECONOMIC CONCEPT	FINDINGS
 Market power	<ul style="list-style-type: none"> Personal Wheelchair Budgets aim to increase user influence in wheelchair care. Personal Wheelchair Budgets have not been implemented throughout NHSE&I. Our quantitative analysis finds that 21% of CCGs have not yet transitioned to Personal Wheelchair Budgets in Q3 2021-22. We find that Personal Wheelchair Budgets have increased mechanisms for creating user choice. However, the funding available in Personal Wheelchair Budgets has limited their impact. Users identified gaps in the funding of Personal Wheelchair Budgets, as they do not cover additional costs like shipping, or repair and maintenance, resulting in a need for users to self-funding elements of care.
 Market fragmentation	<ul style="list-style-type: none"> When adopting new policy, stakeholders highlighted the benefits of greater centralisation of processes. For example, there are a number of different potential outcome-based measures tools that could be adopted. Stakeholders suggested greater coordination by NHSE&I (e.g., through recommending or mandating a particular tool with specific metrics) is required in order to ensure shared learnings and comparability of practice.
 Innovation	<ul style="list-style-type: none"> There are examples of innovative practices in providing care as a result of policy initiatives. For example, outcome-based measures are tools that help services to collect information on users' goals and assess the extent they have been met, helping service providers to close their knowledge gap on users' priorities and satisfaction. However, we found that many services have not adopted outcome-based measures due to the additional workforce pressure that would be created on the already stretched workforce.

7.2 POLICY CHANGES

NHS England ran two wheelchair summits in 2014. These summits highlighted a range of challenges, including the use of block contracts which stifle creativity, the lack of consistency in provision across the country, and wasteful duplication of assessments. Following these summits, NHS England committed to helping CCGs to commission more effective, higher-quality wheelchair services. Specific initiatives introduced from 2014 to date include:

- Publishing a **Model Service Specification** to tackle the issue of variation in quality of services. The specification outlines the provision of standard and specialised wheelchair and posture services. It describes the role, function and responsibilities of these services.
- Developing a **National Wheelchair Tariff**. This currency model was designed to help improve commissioning and provision of wheelchair services through improved tariff information.
- Establishing a **National Wheelchair Dataset** about expenditure on, access to, and user experience of wheelchair services.
- Introducing **Personal Wheelchair Budgets** as a resource available to increase people's choice and control of wheelchair provision, either within NHS commissioned services or outside of NHS commissioned services.

In the following sub-sections, we described the impact of each of these initiatives, in turn, evidenced by findings from the qualitative engagement and quantitative analysis.

7.2.1 MODEL SERVICE SPECIFICATION

The Model Service Specification for wheelchair and posture services “sets out the ambitions for excellent wheelchair service and provides CCGs with a framework for them to use with their service users, providers and suppliers to commission services that meet the needs of wheelchair users and their families.”⁵⁸

The Model Service Specification aims to create consistency across different approaches that exist for providing wheelchair services and tackle variation in quality. Critically, the guidance recognised the need for CCGs to be able to commission services that meet the needs of their local population and is non-mandatory in nature.⁵⁹

The **qualitative engagement** found a mixed impact of the Model Service Specification:

- The Model Service Specification is considered by many commissioners to be an important tool to enable CCGs to make informed decisions in relation to the service provider offerings. A number of stakeholders suggested that CCGs do not generally have sufficient sector-specific expertise and very often contract providers whose offer is below minimum standards of quality. The information and guidance provided by the Model Service Specification were therefore suggested to be of high value to commissioners.
- The non-mandatory nature of the specification was suggested to limit the impact of the Model Service Specification. Many of the recommendations have not been consistently translated into practice across wheelchair services in England. For example, despite the Model Service Specification recommending that commissioners and providers use outcome measures to track the progress of individual users, a number of interviewees suggested that services are reluctant to use such measures. This was explored further as part of a case study on outcome-based measures (see below).
- Stakeholders suggested that the recommendation for the Model Service Specification to be tailored to local population needs has reduced the potential benefits from consistency and standardisation. In particular, this recommendation may enable commissioners to significantly re-interpret and re-tailor services to the characteristics of the local area, moving away from the intention of the Model Service Specification.

CASE STUDY: OUTCOME-BASED MEASURES



The case study on outcome-based measures explores the following questions:

- To what extent are outcome-based measures currently adopted?
- What are the potential impacts of adopting outcome-based measures?
- What are the potential barriers to adopting outcome-based measures?

Current adoption and potential of outcome-based measures

⁵⁸ <https://www.england.nhs.uk/publication/model-service-specification-for-wheelchair-and-posture-services/#:~:text=The%20model%20service%20specification%20has,wheelchair%20users%20and%20their%20families.>

⁵⁹ <https://www.england.nhs.uk/wp-content/uploads/2017/07/wheelchairs-model-service-specification.pdf>

Outcome-based measures are tools that help services to collect information on users' goals and assess the extent that which they have been met, helping service providers to close their knowledge gap on users' priorities and satisfaction. The Model Service Specification recommends the use of outcome-based measures as best practice.

We have identified a number of existing outcome-based measures platforms and approaches for wheelchair services. For example, the WATCH Tool is an example of an outcome-based measure used by some services to monitor service outcomes.⁶⁰ Users are presented with sixteen areas that a wheelchair might be able to help with, and they are asked to decide which are the five most important areas to them. They are then asked to score how satisfied and happy they are with each of their top five areas before and after getting their new wheelchair. The aim is that this allows the service provider to monitor whether there have been improvements in users' lives after getting their wheelchairs. Other outcome-based measures identified include the 'Wheelchair Outcome Measure' (WhOM)⁶¹ and 'Functioning Everyday with a Wheelchair' (FEW).⁶²

Stakeholders suggested that outcome-based measures are a potentially effective mechanism to improve communication between service providers and users, can encourage more holistic care, and create greater incentives for wheelchair services to be user-focused.

Despite the recommended use of outcome-based measures by the Model Service Specification and a widespread view among stakeholders that they would improve outcomes, many interviewees confirmed that the majority of services are currently not using them.

Potential barriers to adopting outcome-based measures

Service providers and commissioners suggested a number of reasons why the use of outcome-based measures is not widely adopted by services.

- Collecting the information required by outcome-based measures is resource-intensive and places additional pressure on the workforce. Interviews and questionnaires would need to be conducted at standardised time intervals, and that would require additional staff and additional funding, thus increasing the cost of provision.
- Services that have implemented the collection of outcome measures found that these types of measures are too static and therefore are not able to capture the dynamic nature of users' goals, which tend to change over time. Some service providers feel that a simple "before and after" comparison of users' satisfaction could potentially risk misrepresenting the quality of the service.
- There are currently a number of different potential outcome-based measures tools that could be adopted. Stakeholders suggested greater coordination by NHSE&I (e.g., through recommending or mandating a particular outcome-based measure with specific metrics) is required in order to develop consistent adoption of outcome-based measures.

7.2.2 NATIONAL WHEELCHAIR CURRENCY

The National Wheelchair Currency was designed to help improve the commissioning and provision of wheelchair services. It provides information to commissioners to facilitate a better understanding of wheelchair services and the needs of service users. This currency defines different categories of need (low,

⁶⁰ <https://cheme.bangor.ac.uk/watch-tool/>

⁶¹ <https://millerresearch.osot.ubc.ca/tools/mobility-outcome-tools-2/the-wheelchair-outcome-measure-whom/#:~:text=The%20WhOM%20is%20a%20client,part%20consists%20of%20structured%20questions.>

⁶² https://www.researchgate.net/publication/327023575_Functioning_Everyday_with_a_Wheelchair_FEW_Tools_A_review

medium, high) to help classify different aspects of wheelchair services, links the different categories of need with respect to tariff payments and provides guidance on implementing payment locally.⁶³

NHSE&I aim that the Wheelchair Currency has two key impacts:⁶⁴

- Provides commissioners with information that enable them to move away from block contracts of service provision; and
- More generally, support better commissioning by increasing transparency, improving efficiency and better aligning resources to service user needs.

One commissioner flagged to us that many CCGs are not aware of the existence of the Wheelchair Currency and do not use it in their service contract. Other commissioners suggested that the Wheelchair Currency can offer tangible benefits such as benchmarking the value of services.

A number of commissioners and service providers highlighted the difficulty in categorising users as low, medium and high need. Some users may be categorised as high need, but in practice, the equipment solution they require is 'off-the shelf'. In contrast, some low need users may need more bespoke equipment where greater costs are incurred. As a result, some stakeholders implied that the Wheelchair Currency does not always include sufficient nuances in relation to user needs and the resulting costs of service provision.

7.2.3 NATIONAL WHEELCHAIR DATASET

This National Wheelchair Dataset was designed to improve transparency and benchmarking and provides regular information at the CCG level on a range of indicators, including:

- The number of users registered with each wheelchair service;
- The number of new referrals within the reporting period;
- Each CCG's success in meeting waiting time targets for equipment handover; and
- Current spending by each CCG on their wheelchair service.

We analysed these indicators as part of this study, and our findings are included throughout this report.

In the **qualitative engagement**, many stakeholders suggested that the National Wheelchair Dataset is a significant positive step forward in terms of data availability. It has enabled services to compare performance against each similar CCG. This has led to discussions about key drivers of service quality and provided a means to develop transparency and accountability between commissioners and providers of care.

However, stakeholders in the qualitative engagement highlighted two limitations of the National Wheelchair Dataset:

- **There are inconsistencies in the data that limit comparability.** Particular concerns were raised regarding the collection of data on waiting times. Some services report waiting times starting from assessment, while others are using referral as a starting point. Further, some services "stop the

⁶³ <https://www.england.nhs.uk/wp-content/uploads/2017/03/guidance-using-wheelchair-currency.pdf>

⁶⁴ <https://www.england.nhs.uk/wp-content/uploads/2017/03/guidance-using-wheelchair-currency.pdf>

clock” when events outside their control delay the delivery of equipment (such as hospitalisation), while other services do not use this option.

- **The data collection is not reflective of the on-ground experience.** Stakeholders suggested that the data collected is limited to a number of indicators that do not capture the experience of users with wheelchair services. Stakeholders suggested that consistent adoption and reporting of outcome-based measures would enhance the richness of data collected by including a user perspective.

From our **quantitative analysis** of the National Wheelchair Dataset, we also identified a number of gaps. The data is not complete across CCGs, which limits the robustness of analysis conducted from the dataset. There may be a selection bias for the CCGs that have data entered. It may be the case that CCGs that have better waiting times performance are those who report data. Response rates are particularly low for metrics such as annual expenditure, where there is only a 68% response rate. Our recommendations for improvements to data collection are outlined in section 8.

7.2.4 PERSONAL WHEELCHAIR BUDGETS

Since April 2017, all CCGs have been expected to start developing plans to offer Personal Wheelchair Budgets to replace the wheelchair voucher system. The latest wave of available data (October-December 2019) indicated that almost two-thirds of CCGs have implemented Personal Wheelchair Budgets while the remaining third still use the older voucher system.

Personal Wheelchair Budgets aim to include postural and mobility needs in wider care planning and can support people to access a wider choice of wheelchair.⁶⁵ According to NHSE&I, with a Personal Wheelchair Budget, wheelchair users should expect to have:

- A **personalised assessment** where they are supported to identify the health and wellbeing outcomes they wish to achieve;
- A **care plan** which captures health and wellbeing needs identified, which may be part of any wider care plans the person requires for their care, for example, an Education, Health and Care (EHC) plan;
- **Care that is better integrated**, meaning that different agencies work together to support their postural and mobility needs and achieve their health and wellbeing outcomes;
- Information provided upfront about the amount of money available in their Personal Wheelchair Budget and the options available to them locally to use it; and
- Information about the **repair and maintenance of wheelchairs**, if the option to purchase a wheelchair outside of the NHS commissioned service is taken.

As part of our **quantitative analysis** of the National Wheelchair Dataset, we find that 21% of CCGs had not yet transitioned to Personal Wheelchair Budgets in the third quarter of 2021-22. We also find that CCGs that have not yet transitioned to Personal Wheelchair Budgets have, on average, a slightly higher proportion of users served within the 18-weeks time target: 77% of high need users met waiting time targets in CCGs not offering Personal Wheelchair Budgets versus 75% of high need users in areas that offer Personal Wheelchair Budgets in quarter 3 of 2021-22.

In some cases, we understand that the increased flexibility created through Personal Wheelchair Budgets is contributing to delays. One service provider interviewed suggested it takes more time to close an episode

⁶⁵ <https://www.england.nhs.uk/personal-health-budgets/personal-wheelchair-budgets/>

of care for someone using a Personal Wheelchair Budget. This is because the market research that users need to do in order to go to the retail market and get the right piece of equipment is generally a time-consuming process. Nonetheless, there could be other factors determining this difference, and our study does not find a causal connection between Personal Wheelchair Budgets and a reduced ability to meet waiting times targets.

Our qualitative engagement suggested a mixed view on the impact of Personal Wheelchair Budgets (see Table 15). Overall, we find that Personal Wheelchair Budgets have increased mechanisms for creating user choice. However, the funding available in Personal Wheelchair Budgets has limited their impact.

TABLE 15 IMPACT OF PERSONAL WHEELCHAIR BUDGETS

POSITIVE IMPACT	LIMITED IMPACT
<ul style="list-style-type: none"> ▪ A number of stakeholders (including users and providers) stated that Personal Wheelchair Budgets had increased users’ choices. Manufacturers suggested they have allowed for a movement into more bespoke and tailored products. ▪ Commissioners provided examples of Personal Wheelchair Budgets giving users the ability to draw in expertise from a number of other local services and allowing for links with education groups and social care. They stressed that these interactions with other services were not happening to the same extent before Personal Wheelchair Budgets and therefore have been facilitated through their introduction. ▪ Commissioners suggested that the benefits of Personal Wheelchair Budgets depend on the effectiveness of the commissioning of the service and how well users are supported. If users are well supported, Personal Wheelchair Budgets have the potential to support users to create a holistic service. 	<ul style="list-style-type: none"> ▪ Personal Wheelchair Budgets often do not provide sufficient funding for users to get the wheelchairs that they require. ▪ Users identified gaps in the funding of Personal Wheelchair Budgets, as they do not cover additional costs like shipping, or repair and maintenance, resulting in a need for users to self-fund elements of care. ▪ A retailer, user groups and providers suggested that users often pay premiums in comparison to the NHS when purchasing equipment through retailers funded by Personal Wheelchair Budgets. This was linked to the limited buyer power of individuals versus the NHS, which is outlined in section 5.3. ▪ Many users flagged that different services have different amounts of funding set aside for their budgets. Some stakeholders perceived this as unfair and felt that this risks exacerbating the regional disparities in service quality. ▪ Users noted the potential for greater synergies across funding sources. For example, users suggested that it would be beneficial if they were able to use Personal Wheelchair Budgets in combination with Personal Independence Payment (PIP) and Disability Living Allowances (DLA).

7.3 ROLE OF WIDER FACTORS

Our **qualitative engagement** highlighted disruptions of supply chains from Covid-19, which impacted wheelchair service provision.

Stakeholders suggested Brexit has not had much impact on supply chains for wheelchairs as the vast majority of products are manufactured outside the EU. As wheelchairs are classified as medical devices, they are exempt from tariffs.

However, suppliers and service providers noted the significant impact of Covid-19 on lead times and delays. One charity flagged an increase in average shipping times to twenty-eight days (from twenty days pre-Covid).

A manufacturer described how before Covid-19, it would take fifteen working days for a powered wheelchair to be delivered (from ordering to delivery to the provider); this same process now takes twenty-five days. An independent retailer stated that supply chain issues and logistic problems had been a constant issue throughout the pandemic, with equipment often being unavailable to order.

8 FINDINGS: OPPORTUNITIES TO IMPROVE AND RECOMMENDATIONS

In this section, we have drawn together all the evidence gathered to provide answers to the specific research questions and thereby highlight interventions and recommendations that could be adopted in order to address challenges in wheelchair provisions. We propose recommendations across three areas: policy, regulation and data and information.

Our recommendations are articulated in the context of the economic concepts that we have centred our study on.

8.1 REVISITING THE RESEARCH QUESTIONS

In this sub-section, we revisit the research questions posed and provide a summary of the evidence that we have collected against each. This provides a basis for our recommendations to improve wheelchair provision.

Across all forms of wheelchair procurement, what are the major economic challenges?

Throughout the report, we have centred our findings based around six identified economic concepts. The key findings for each of these concepts are outlined below.

- **Asymmetric information.** We found that the fragmentation of services across CCGs has led to limited transparency about costs paid for equipment and other aspects of wheelchair services across CCGs. Further, there are concerns that users are not always in the position to determine whether they have received a high-quality service.
- **Lack of appropriate incentives.** The Model Service Specification for Wheelchairs provides guidance on the role, function and responsibilities of NHS commissioned wheelchair services. It is non-mandatory in nature and therefore does not provide incentives for its consistent application across CCGs. We found gaps in the current regulation of wheelchair services, particularly related to the need for more rigorous and consistently applied regulation on providers of services and the retail sector.
- **Market Power.** We found limited mechanisms for users to communicate with CCGs, providers and retailers, resulting in a limited ability for users to be able to influence the approach to care. Many stakeholders interviewed highlighted inconsistencies in wheelchair services across the country, including in access to care and equipment. These were identified to be both across CCGs and within CCGs.
- **Economies of scale.** We found the fragmentation of wheelchair services has prevented the development of economies of scale across wheelchair provision.
- **Market fragmentation.** A clear theme across the evidence collected is the lack of a central body for wheelchair services and the corresponding lack of integration across CCGs. Individual CCGs are able to create a wheelchair service with their own unique characteristics. Although this allows for services to be tailored to the local context, wheelchair services are seen to be a “*post-code lottery*”, with varying quality of care across services.

From a market perspective – what are the resulting impacts on end-users?

Overall, we find that wheelchair services play a vital role in many aspects of people’s lives. NHS and wider provision allow individuals with mobility needs to have increased independence. All stakeholders

highlighted concerns around service equity and user fairness. We found examples of users who are left without adequate equipment, leading to self-funding of permanent or temporary equipment. We also found examples of users being unaware of how and where to access services. Further, users are also unsure of where to report feedback and concerns with wheelchair provision. Together, these impacts can have significant implications for users of wheelchairs and their carers, leading to a reduction in independence and reduced quality of life as well as increased care costs.

Why has innovation in the sector remained difficult to access?

We found many examples of innovative practices in multiple aspects of wheelchair provision, including innovations related to the structure and operation of NHS wheelchair services (such as pooled funding models and innovative pathway models disseminated through regional networks) and innovations in terms of equipment offerings (such as wheelchairs with seat risers).

We found that innovative forms of provision have tended to rely on individual commissioners and providers of care going above and beyond. The adoption of innovative service provision is therefore limited by the workforce pressures on wheelchair services.

We also found examples of manufacturers offering innovative products that would result in benefits to user experiences. However, the levels of funding for wheelchair services are often not sufficient to allow users to access this equipment via the NHS. Further, we found that the fragmentation of wheelchair services results in ineffective procurement of equipment, which is often not focused on innovations that benefit users.

What examples of best practice procurement, logistics, service design, and training exist?

Through our qualitative engagement, we found a number of examples of best practices. These include:

- The adoption of pooled funded models (discussed in section 4.4)
- The use of regional networks to develop and encourage the dissemination of best practices (discussed in section 4.4)
- The adoption of outcome-based measure and their potential to create a user-centric approach to services (discussed in section 7.2).

8.2 RECOMMENDATIONS & OPPORTUNITIES

In this sub-section, we explore our findings for our final research question, 'Where is intervention most needed in the system to solve identified problems?'.

Our research finds that there are clear opportunities for beneficial change, which we have grouped into three areas: additional support for wheelchair services, regulation and data and information.

8.2.1 ADDITIONAL SUPPORT FOR NHS WHEELCHAIR SERVICES

- If **NHSE&I played a more active role** in ensuring that all CCGs prioritise wheelchair services and dedicate sufficient resources to their operation, the outcomes for some wheelchair users may be improved. Mandating the adoption of the Model Service Specification or requiring more standardisation of eligibility criteria may help to achieve this.

- NHSE&I could add further value by helping local areas **fill existing skill gaps** that we have identified in both commissioning and delivery of wheelchair services. This could partially be achieved via sharing of high quality and innovative practices which exist in certain parts of the country but are not universally known or implemented.
- **Improvements in communication** and the flow of information between stakeholders are also required. This could help to empower users and reduce information asymmetries that we have identified. These improved information flows could be achieved via further mandating the adoption of outcome-based measures and requiring all commissioning of NHS wheelchair services to adequately reflect user experiences. This last point can empower users to create the type of service they want in each local area. Currently, we were told that users' voices are not always included in the design of services and ongoing procurement decisions. There are multiple examples of best practices in this area. For example, we were told of instances where users' feedback has successfully informed tendering processes. This should be replicated more widely. Users' own priorities should be reflected wherever possible, both in the upfront design of services and ongoing feedback in relation to existing services. Any information that is shared between stakeholders (e.g., between wheelchair services and users) needs to be done so in an accessible and transparent format. Otherwise, there is a risk that additional information does not contribute to improved understanding and awareness.
- Future work could compare the current model for wheelchair provision with other types of provision (e.g., hearing aids, optical services) to determine whether any improvements in process can be identified or best practice in terms of information sharing could be adopted in this context.
- Finally, if NHSE&I sought to increase **integration across services**, economies of scale could be unlocked, and innovation could be facilitated. This type of integration could mean that unwarranted variation in the quality of provision is reduced and best-practice approaches are more widely adopted (e.g., pooled budgets). However, the precise role played by NHSE&I in this context does require careful consideration as there are clear benefits associated with each local service having the flexibility to adapt to the needs of their own population.
- These additional forms of support will help to ensure that users receive a more consistent standard of wheelchair service provision in different parts of the country and have more opportunities to shape those services.

8.2.2 REGULATION

- All NHS services (both those provided by NHS organisations and those tendered out) need to be subject to a consistent and appropriate level of regulation. For example, a more rigorous mandated regulation of all services could be carried out in the future by an organisation like the Care Quality Commission (CQC).⁶⁶ Currently, the CQC remit does not extend to in-depth reviews of tendered services.
- Separately, additional regulation for private retailers would be beneficial to avoid any potential user exploitation. Concerns were raised in relation to the BHTA's ability to effectively regulate retail provision. It may therefore be beneficial to consider whether the BHTA needs to be given additional powers or separate oversight processes need to be established. Finally, an independent complaints body where users are able to raise concerns with services would add value.

⁶⁶ To be successful any regulation of NHS services would firstly need to recognise the different ways in which services are set up and managed before taking any action.

- Addressing the current inconsistent and fragmented regulatory landscape in this context will mean that outcomes for users improve as providers are held to account more effectively.

8.2.3 ROLE OF CHARITIES AND SOCIAL ENTERPRISES

- Charities have a crucial role to play in enabling individuals to access appropriate equipment and providing wider support. Currently, the charity market is **somewhat fragmented, and multiple charities have partially overlapping remits**. It may be possible to generate a larger positive return on charitable funds if there was some pooling of resources.
- We found that examples of where users are left without adequate equipment, leading to self-funding of permanent or temporary equipment, and examples of users being unaware of how and where to access services. **Charities could assist by providing users with advice in order to increase users understanding and ability to access wheelchair services.**
- If NHS provided services evolve over time, there may be a different requirement placed on the charitable sector in this context. Currently, some charities see themselves as **filling gaps in NHS provided services**.
- Levering all charitable funding in the most impactful way possible will mean that wheelchair users and their families will have a broader range of viable options to pursue.

8.2.4 DATA AND INFORMATION

We have also identified a number of **information gaps** and areas for further research which could provide additional insights into the current scale of challenges in the provision of wheelchair services in England. These insights may help to further refine potential interventions that could be delivered and also empower users to make more informed choices by reducing informational asymmetries and clarifying expectations regarding standards of provision.

- We recommend that **further work is undertaken to estimate the scale of demand for wheelchair services**. Our estimate of the overall national demand for wheelchair services is based on 2018 data and may not reflect the most recent evolution of demand. It is also based on combining two distinct data sources, which could lead to greater uncertainty. In the past, NHSE&I has estimated the number of wheelchair users by relying on research undertaken over 20 years ago.⁶⁷ We expect that this figure is no longer accurate. We recommend that further work is undertaken to estimate the scale of demand for wheelchair services. It is not possible to determine the volume of resources that should be allocated to wheelchair services nationally if there is fundamental uncertainty over the volume of total demand. More information is needed on the number of wheelchairs required to inform the potential scope and scale of services and, in particular, identify individuals who are currently not receiving adequate support.
- In addition, currently it is difficult to comprehensively determine the size and composition of the retail sector. Further work could aim to fill this gap. The total volume of users who opt to engage with the private retail market due to deficiencies in NHS provision is also currently not well understood.
- We recommend that further work is undertaken to **understand the levels of competition** in the provision of wheelchair services. We have not been able to determine the number of competitors

⁶⁷NHS Purchasing and Supply Agency research available here:

https://webarchive.nationalarchives.gov.uk/ukgwa/20130107105354/http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4103391.pdf

involved in each tender process and how this varies across regions as part of our economic study. Addressing this could serve as a useful next step in developing an understanding of the market functioning of wheelchair services.

- We found **limitations to the completeness of the National Wheelchair Dataset and inconsistencies in definitions** that limit the comparison of the data across CCGs. For example, local areas may be calculating waiting times in different ways or using inconsistent definitions regarding patient need. As a result, there is potential for a revised analysis of the National Wheelchair data set once greater completeness and consistency in data collection are achieved.

ANNEX A - EVIDENCE REVIEW

A.1 - EVIDENCE REVIEW PROTOCOL

The review of existing evidence focused on understanding the following **research questions**:

- 1 What does the literature suggest are the biggest challenges and issues in the market for the provision of wheelchair services in England?
- 2 What are the key proposed solutions?
- 3 What are main examples of best practices?

We firstly defined a **search strategy** which allows for the identification of evidence in a structured way. Evidence was identified in multiple ways. Firstly we, the combined Frontier team and client team, were aware of a range of documents which we used as a starting point. We then used targeted keyword Google searches (standard and scholar) to identify additional relevant articles, papers and reports. We also extracted additional relevant articles from the bibliography of this first round of documents.⁶⁸

The identified evidence was then subject to a **review**. First, all identified sources were subject to a high-level review. Following this, each source was ranked based on the relevance of the document to the research questions. Based on this ranking, priority articles were identified and reviewed in greater depth. This in-depth review involved summarising information from each source relevant to each research question and synthesised key themes which consistently emerged.

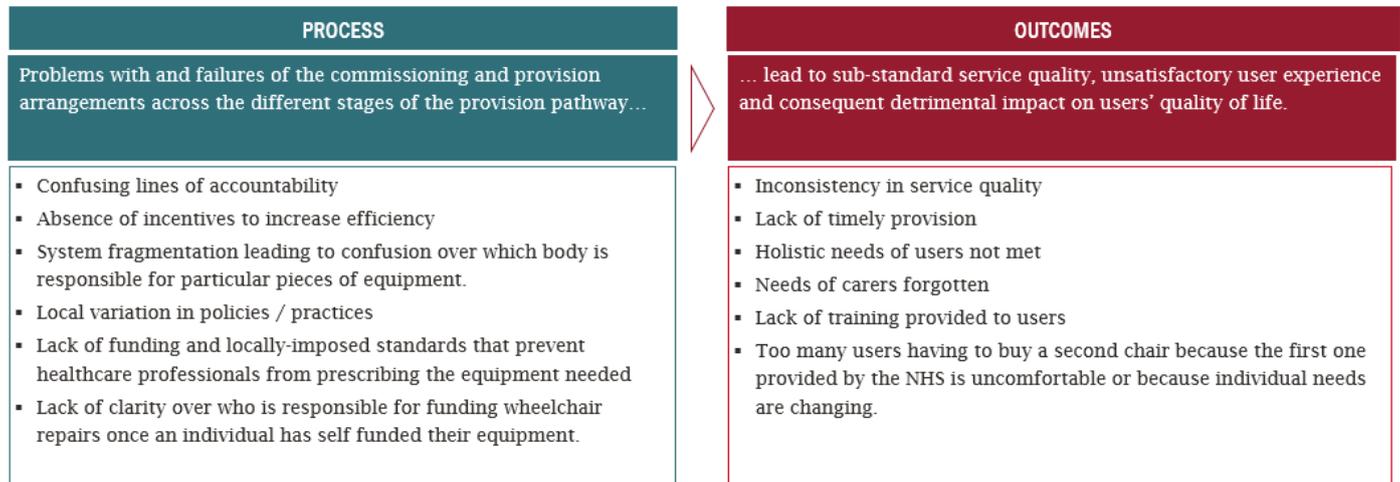
The findings reported in the below annex are from the evidence review only. The main report incorporates the findings of the evidence review linked to our findings from the qualitative engagement and quantitative engagement.

A.2 - ADDITIONAL EVIDENCE REVIEW FINDINGS

The review of existing evidence highlighted several existing issues affecting both the **process** and the **outcomes** of wheelchair service provision, as shown in Figure 26.

⁶⁸ It is important to note that the majority of the papers reviewed were published before 2015. In 2015/16 NHS England committed to support CCGs in improving wheelchair services through three specific initiatives: (i) establishing a national dataset; (ii) developing a national tariff; and (iii) supporting commissioners. We have not found any impact evaluation of the changes implemented by NHS England since 2015/16, therefore some of the issues identified in this review might be outdated and might have already been addressed. However, as part of this study we have corroborated the findings of the evidence review with the other research methods adopted (the quantitative descriptive analysis and qualitative engagement).

FIGURE 26 EXISTING EVIDENCE HAS HIGHLIGHTED ISSUES WITH THE PROCESS OF WHEELCHAIR SERVICE PROVISION AND RESULTING USER OUTCOMES



Source: [Insert Source here]

Note: [Insert Notes]

A.2.1.1 - EXISTING EVIDENCE ON ISSUES AFFECTING THE PROCESS OF WHEELCHAIR SERVICE PROVISION

Confusing lines of accountability

While CCGs are primary commissioners, currently different provision models exist, e.g., in-house, mixed, outsourced. Some evidence sources argue that this latter type of arrangement risks diverting managerial attention more towards the acute needs of a service. Equally, there is some evidence suggesting that when financial savings need to be made, certain NHS Trusts may be reluctant to fill vacancies in their wheelchair service in order to help to meet cost-savings targets⁶⁹. This in turn could reduce the quality of care provided.

Absence of incentives to increase efficiency

Previous reviews of wheelchair provision have noted that there are limited incentives for service providers to become more efficient. In some cases a specified volume is commissioned within the available budget. The provider may not achieve extra income from seeing more users or prescribing additional wheelchairs⁷⁰. However, the current contract-for-cost system may have other advantages (e.g., simplicity) which minimise transaction costs.

Fragmented system

Other sources noted that the current system is fragmented and that lines of accountability are not always clear. For example, the legal obligation to provide equipment for disabled children is split between several local bodies. This has led to confusion over which body is responsible for particular pieces of equipment.

⁶⁹ *Wheelchair services - Costed Scenarios for the Motor Neurone Disease Association*. Civis, 2010

⁷⁰ *Wheelchair services - Costed Scenarios for the Motor Neurone Disease Association*. Civis, 2010

As a result, children can fall through the gaps, leaving charities or families to pick up the costs⁷¹. Responsibility for the provision of equipment for daily living and non-medical needs falls on local authorities. CCGs are responsible for the provision of equipment which is specifically for medical or nursing purposes (like wheelchairs, specialist beds etc.).

Lack of funding

Some studies have noted that NHS funding is inadequate to meet the complex needs of many users. NHS funded services may cover a basic wheelchair but not special seating support, specialist control systems and bespoke modification and adaptations.

Lack of clarity on maintenance and repairs

Some evidence sources have highlighted that there has been a lack of clarity over who is responsible for funding wheelchair repairs once an individual has self-funded their equipment. Wheelchair maintenance has been highlighted as problematic with long waiting lists for repairs and charities often being relied upon for help. Some users have noted that wheelchair services are difficult to get hold of for basic repairs. These delays can mean that some progressive conditions (e.g., muscle wasting conditions) will deteriorate while users are waiting for wheelchairs to be mended⁷².

A.2.1.2 - EXISTING EVIDENCE ON ISSUES AFFECTING THE OUTCOMES OF WHEELCHAIR SERVICE PROVISION

Inconsistency in service quality

Existing evidence highlighted the heterogeneity of the characteristics of local services.

Prior to the development of the National Tariff, Department of Health and Social Care (DHSC) reviewed a number of pilot services (2013). They found that there was no common service model that existed amongst organisations delivering wheelchair services. Furthermore, previous research by the MND Association (2010) came to the same conclusion. They found that each wheelchair service has developed its own eligibility criteria, definition of priorities and pathway.

The British Red Cross (2018) found that short-term wheelchair provision is inconsistent and differs from place to place, often leaving people who would benefit from accessing a short-term wheelchair without one. Out of 139 listed NHS wheelchair providers only 25 confirmed that they provide short-term wheelchairs. There may also be variation in experience within a local area. NHS Improving Quality (2014) has noted that while online reviews from wheelchair service users identified some highly positive experiences this was not consistently the case.

Some studies have noted that each wheelchair service in England used to develop its own eligibility criteria, definition of priorities and pathway. This has meant that two neighbouring services have differing criteria or waiting times. It may be that the model service specification has subsequently reduced some of this unhelpful variation. Our data analysis will help to highlight the extent of this variation⁷³.

⁷¹ *The economic benefits of better provision of equipment for disabled and terminally ill children*. BHTA, 2014.

⁷² *The case for effective wheelchair services*. Get Moving, 2013

⁷³ *Wheelchair services - Costed Scenarios for the Motor Neurone Disease Association*. Civis, 2010

Lack of timely provision

Long waiting times emerged as a common issue. Old analysis carried out in 2010 showed that one third of users wait more than six months after requesting an appointment from the NHS to receiving the wheelchair. This analysis concluded that a lack of knowledge and poor communication by many wheelchair service providers of specialist requirements are significant factors in delays to providing the required wheelchair or enabling the necessary maintenance to be undertaken. The volume of cases and the number of hand-offs between stages in the pathway (from referral and assessment until approval and delivery) mean that cumulative delays can build up⁷⁴. NHS England has set an 18-weeks standard waiting times target. Our data analysis will assess the extent to which this target is being met⁷⁵.

Needs of users not met

Assessment processes for appropriate wheelchair provision have been described as insufficient, too general, unstructured and not considering the varying needs of individuals from different age groups or lifestyles. For example, generic manual wheelchairs were often inappropriately provided for people with muscle-wasting conditions⁷⁶.

Needs of carers forgotten

A 2011 research study found that the needs of carers who manage wheelchairs are not mentioned in any of the key policy documents referenced, nor was the potential impact on their health. This study evidenced negative carer impacts such as increased pain, and a lack of assessment of their needs as a carer, as part of the overall wheelchair assessment. Issues of carers included lack of training to manage the wheelchair, environmental issues in the home, and potentially being placed at risk through exceeding safe load management guidelines⁷⁷.

Lack of training for wheelchair users

95% of respondents to a survey run by Back-up agreed that wheelchair training was essential. But 33% of users had received no training in how to use a wheelchair. People who did receive training attended sessions run by other wheelchair users⁷⁸.

Many users are forced or feel the need to buy a second wheelchair

24% of respondents to a survey run by Back-up stated that **they bought a second wheelchair** because their first one was uncomfortable. Furthermore, 50% of those surveyed said they bought a second wheelchair because of changing personal needs, suggesting that the current system is not addressing the issue⁷⁹.

⁷⁴ *Wheelchair services - Costed Scenarios for the Motor Neurone Disease Association*. Civis, 2010

⁷⁵ <https://www.england.nhs.uk/wheelchair-services/>

⁷⁶ *Right chair, right time, right now, 2013*.

⁷⁷ *Right chair, right time, right now Keeping the Wheels Turning: A research project investigating the needs of carers supporting people who use wheelchairs*. PAMIS 2011

⁷⁸ *Wheelchair user research 2017*. Back-up

⁷⁹ *Wheelchair user research 2017*. Back-up

ANNEX B - QUANTITATIVE ANALYSIS

We carried out a descriptive quantitative analysis of existing data to provide evidence on the scale of and evolution of current issues in wheelchair provision. We focused on summarising and interpreting existing data rather than on forecasting future data points or carrying out detailed econometrics analysis which would not add significant value given the information available. Specifically, the descriptive analysis assesses the following questions:

- To what extent do the characteristics and performance of NHS wheelchair services vary across the country?
- To what extent the scale of provision has changed over time and the quality of provision has improved?
- What are the key drivers of performance?

The additional results presented in this annex are all based on the analysis of the National Wheelchair dataset augmented with other local area information (such as data on deprivation⁸⁰, population demographics⁸¹, CCG mergers).

B.1 - ADDITIONAL RESULTS – QUARTER 3 2021-22

Proportion of high need users by CCG

In section 3.1 we find a significant variation in the share of users classified as high need across different services. In the figure below, we find that there is no clear geographical pattern.

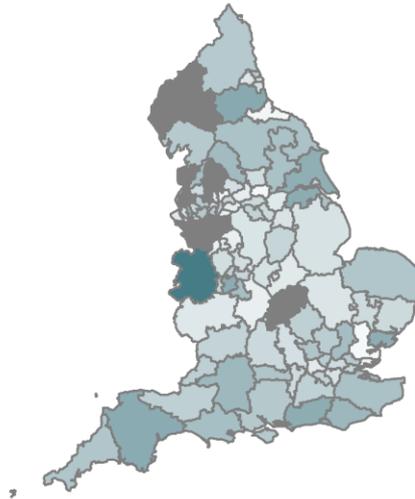
⁸⁰ www.gov.uk/government/statistics/english-indices-of-deprivation-2019

⁸¹ <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/bulletins/annualsmallareapopulationestimates/mid2016>

FIGURE 27 PROPORTION OF HIGH NEED USERS BY CCG – QUARTER 3 2021-22

Proportion of high need users in each CCG - Q3 2021-22

0% - 10%	10% - 20%	20% - 30%	30% to 60%



No data available for grey CCGs

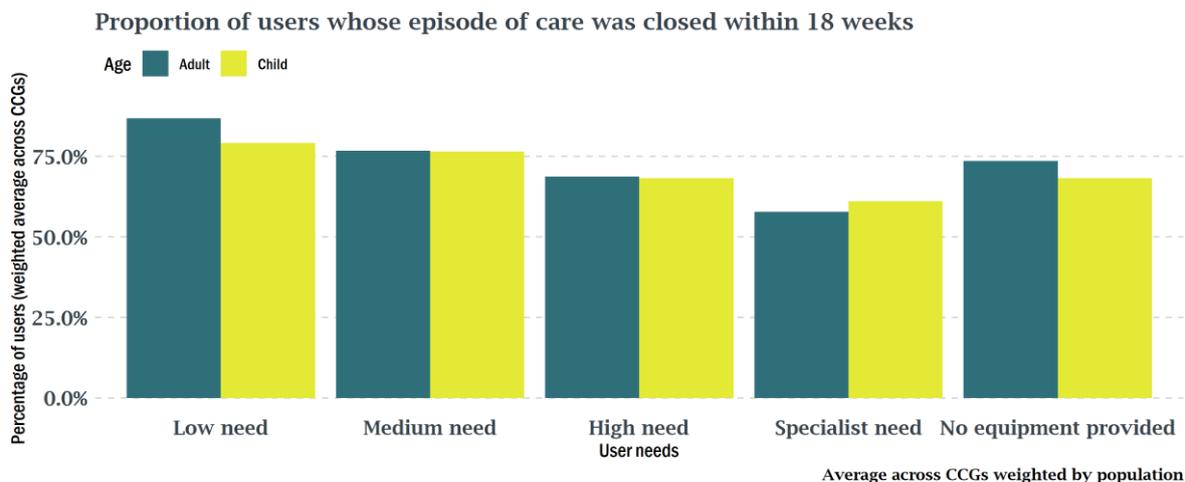
Source: Frontier economics analysis of the National Wheelchair Dataset

Note: The National Wheelchair Dataset does not classify all users registered by type of need. Only new and re-referred users whose episode of care was closed in the reporting period are reported by type of need. We use the proportion of new and re-referred users whose episode of care was closed in the reporting period who are classified as high need as a proxy of the overall proportion of high need users

Proportion of users whose episode of care was closed within 18 weeks by age and type of need

The figure below shows that the average across CCGs of share of users whose episode of care was closed within 18 weeks does not differ much between adults and children. However, some variation can be observed across different need groups, with lower and medium need users experiencing shorter waiting times on average compared to high and specialist need users.

FIGURE 28 PROPORTION OF USERS WHOSE EPISODE OF CARE WAS CLOSED WITHIN 18 WEEKS BY AGE AND TYPE OF NEED – QUARTER 3 2021-22



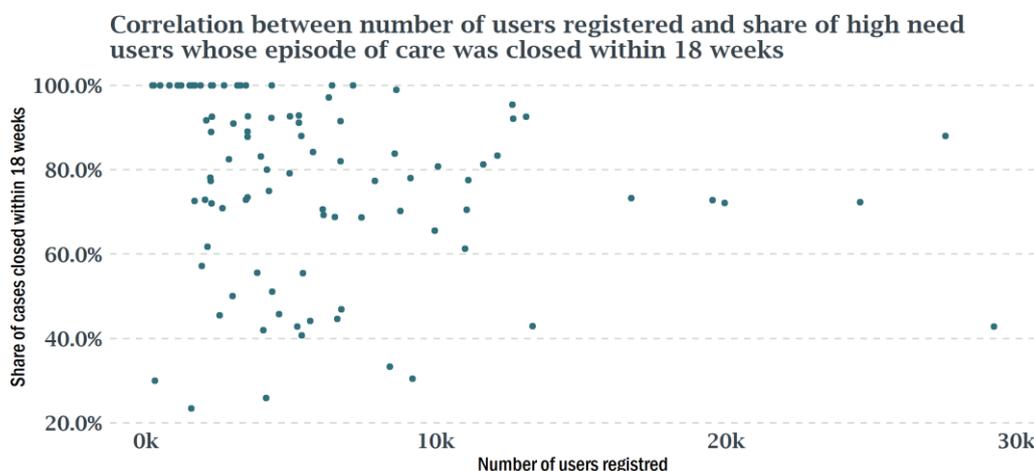
Source: Frontier Economics analysis of the National Wheelchair Dataset

Note: The National Wheelchair Dataset does not classify all users registered by type of need. Only new and re-referred users whose episode of care was closed in the reporting period are reported by type of need. We use the proportion of new and re-referred users whose episode of care was closed in the reporting period who are classified as high need as a proxy of the overall proportion of high need users

Correlation between number of users registered and share of high needs users whose episode of care is closed within 18 weeks

We find that there is no clear correlation can be observed between number of users registered in a service and share of episodes of care closed within the 18 weeks’ time target (see figure below). However, it is possible that a relationship is not observed in this case because the CCGs differ in many characteristics that confounds this relationship. A simple correlation measure cannot successfully “isolate” the impact of number of users registered on waiting times from the impact of other factors.

FIGURE 29 CORRELATION BETWEEN NUMBER OF USERS REGISTERED AND SHARE OF HIGH NEED USERS WHOSE EPISODE OF CARE IS CLOSED WITHIN 18 WEEKS – QUARTER 3 2021-22



Source: Frontier Economics analysis of the National Wheelchair dataset

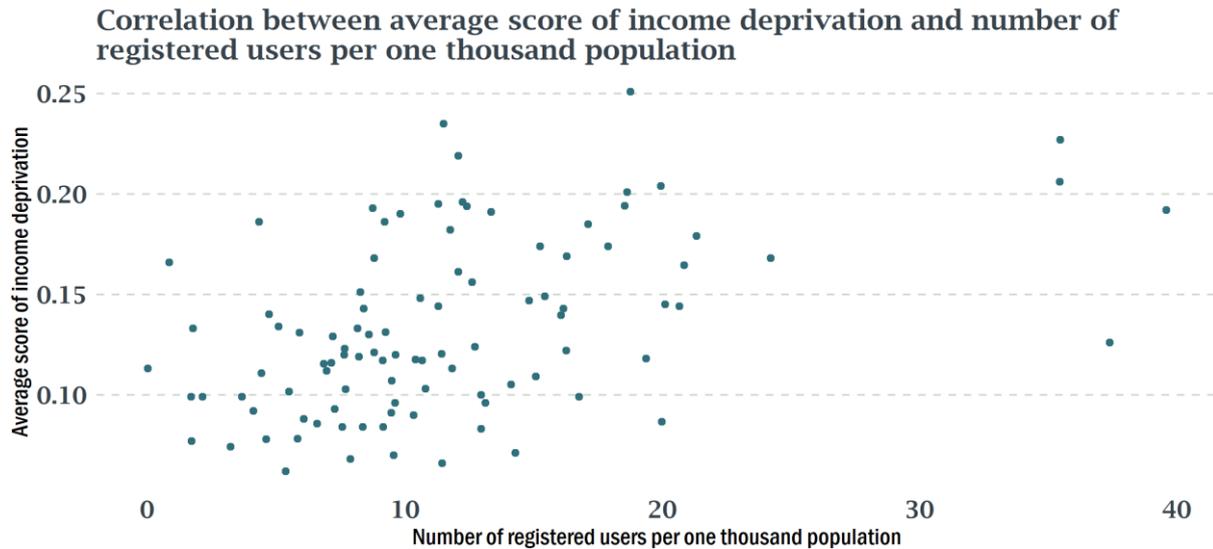
AN ECONOMIC ASSESSMENT OF WHEELCHAIR PROVISION IN ENGLAND

Note: The National Wheelchair Dataset does not classify all users registered by type of need. Only new and re-referred users whose episode of care was closed in the reporting period are reported by type of need. We use the proportion of new and re-referred users whose episode of care was closed in the reporting period who are classified as high need as a proxy of the overall proportion of high need users

Correlation between 2019 score of income deprivation and number of registered users per one population

The figure below shows a significant positive correlation between average score of income deprivation and number of registered users per one thousand population. This suggests that a higher score of income deprivation in a CCG corresponds to a higher number of users registered per head of population.

FIGURE 30 CORRELATION BETWEEN 2019 SCORE OF INCOME DEPRIVATION AND NUMBER OF REGISTERED USERS PER ONE POPULATION – QUARTER 3 2021-22



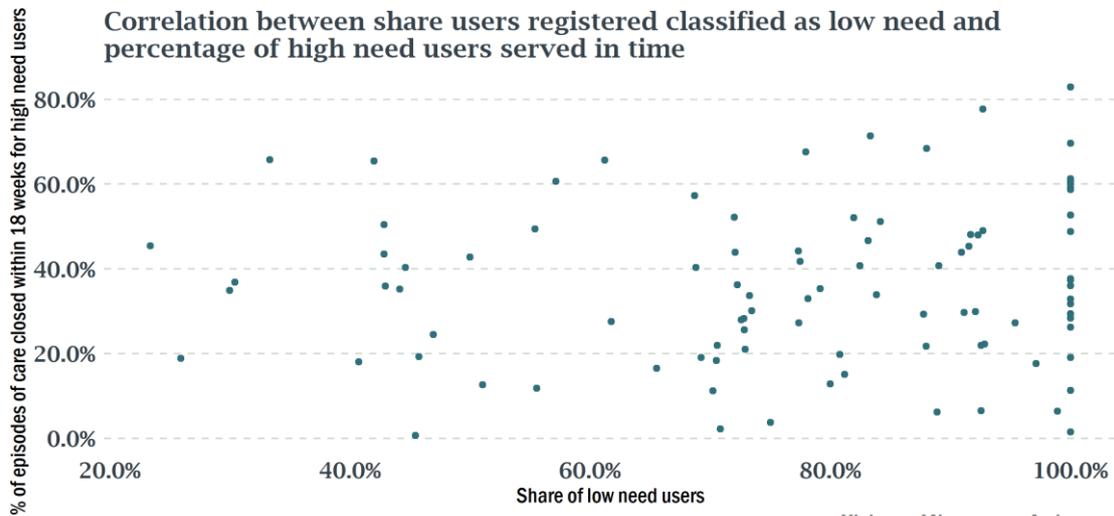
Source: Frontier Economics analysis of the National wheelchair dataset and English indices of deprivation 2019

Note: The average score of income deprivation is calculated by averaging the LSOA scores in each larger area after they have been population weighted. The resultant scores for the larger areas are then ranked, where the rank of 1 (most deprived) is given to the area with the highest score. This gives a measure of the whole area covering both deprived and non-deprived areas. The main difference from the average rank measure described above is that more deprived LSOAs tend to have more ‘extreme’ scores than ranks. So highly deprived areas will not tend to average out to the same extent as when using ranks; highly polarised areas will therefore tend to score higher on the average score measure than on the average rank.

Correlation between share of users registered classified as low need and percentage of high need users whose episode of care was closed within 18 weeks

In the qualitative engagement some stakeholders suggested that one of the reasons behind the geographical variation in waiting time for high need users is that some services do not take in charge low need users (redirecting them to private sector or to charities like the Red Cross) and therefore can channel more resources towards high need users. However, no clear correlation was observed between share of users registered in the service classified as low need and share of high needs users whose episode of care was closed within the 18 weeks’ time target (see figure below).

FIGURE 31 CORRELATION BETWEEN SHARE OF USERS REGISTERED CLASSIFIED AS LOW NEED AND PERCENTAGE OF HIGH NEED USERS WHOSE EPISODE OF CARE WAS CLOSED WITHIN 18 WEEKS – QUARTER 3 2021-22



Source: Frontier Economics analysis of the National Wheelchair dataset

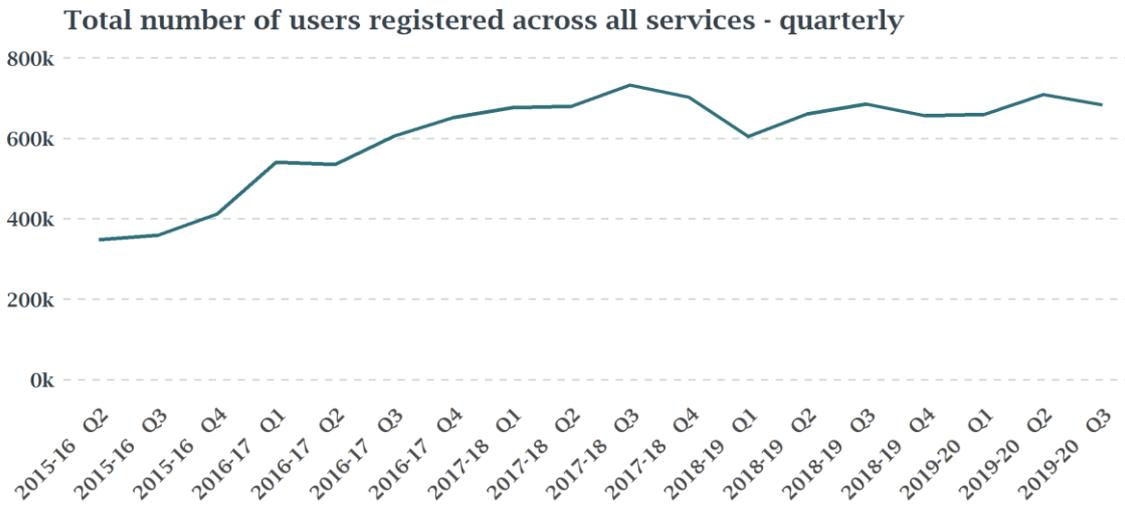
B.2 - ADDITIONAL RESULTS – TIME SERIES ANALYSIS 2015-16 TO 2019-20

In addition to analysing the most recent wave of data, focusing on variation across the country, we also carried out a descriptive time series analysis of the waves of data that were released pre-COVID (from Q2 of 2015-16 to Q3 2019-20), focusing on variation over time. The information collected in the National Wheelchair dataset in pre-COVID waves is different from what has been collected in the two post-COVID waves, which are therefore not included in this time series analysis.

Total number of users registered across all services

The figure below shows the total number of users registered reported by services to the National Wheelchair dataset over time. The growth observed over time is mainly due to the increase in response rate by CCGs – since 2015-16 the proportion of CCGs reporting wheelchair data has risen significantly over time, from less than 50% in 2015-16 to more than 90% in 2019-20).

FIGURE 32 TOTAL NUMBER OF USERS REGISTERED ACROSS ALL SERVICES – QUARTERLY

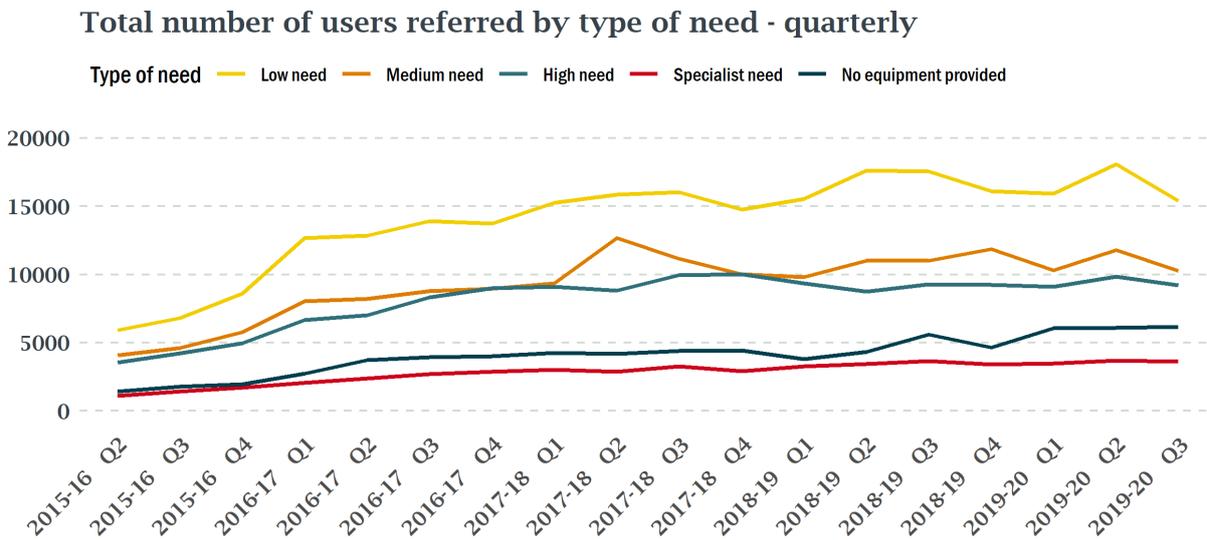


Source: Frontier Economics analysis of the National Wheelchair Dataset

Total number of users referred in the reporting period by type of need

The figure below shows the total number of users’ referrals whose prescription decisions was made in the reporting period by type of need. Once again, the growth observed is due to the growing response rate by CCGs.

FIGURE 33 TOTAL NUMBER OF USERS REFERRED IN THE REPORTING PERIOD BY TYPE OF NEED – QUARTERLY

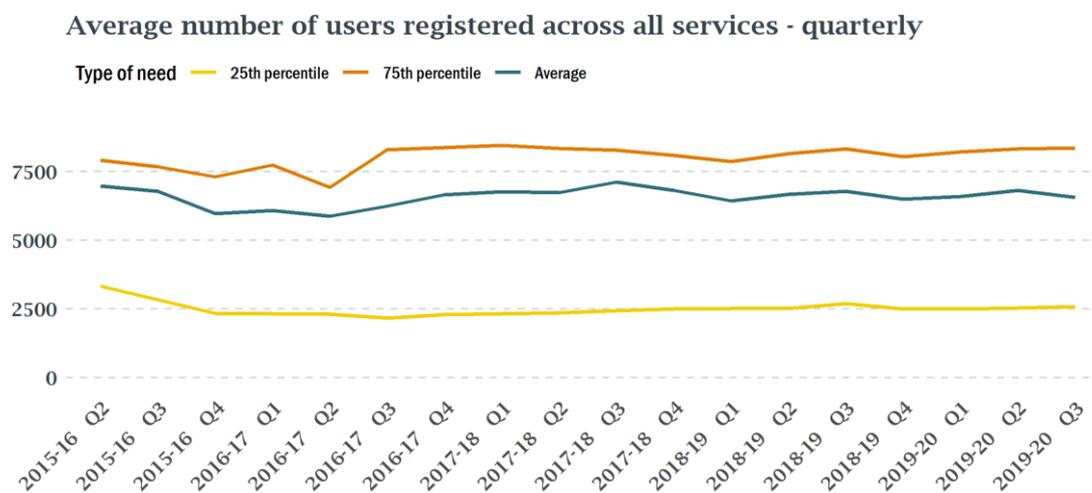


Source: Frontier Economics analysis of the National Wheelchair Dataset

Average number of users registered across all services

This figure shows the evolution over time of the average number of users registered in CCGs and it shows that it has not varied significantly, staying constantly between 6,000 and 7,000 users. However, as discussed in Section 3.1, this national average masks significant geographical variation.

FIGURE 34 AVERAGE NUMBER OF USERS REGISTERED ACROSS ALL SERVICES - QUARTERLY

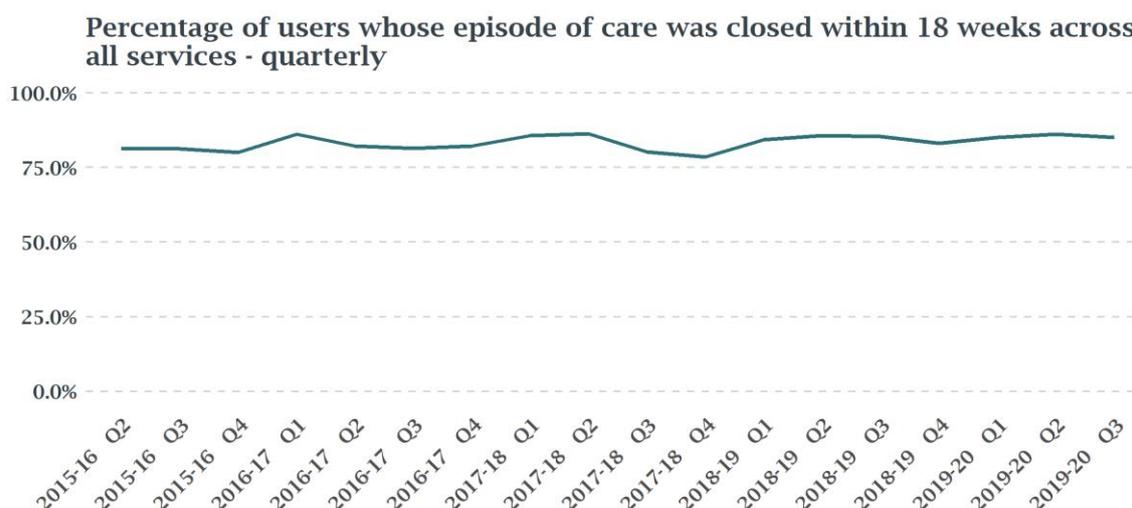


Source: Frontier Economics analysis of the National Wheelchair Dataset

Percentage of users whose episode of care was closed within 18 weeks across all services

The figure below shows the evolution over time of the percentage of users whose episode of care was closed in the reporting period where equipment was delivered in 18 weeks or less, across all CCGs. Overall, this statistic has exhibited little variability since 2015 and has been approximately 80% in most periods. However, as discussed in Section 4.6, this national average masks considerable geographical variation.

FIGURE 35 PERCENTAGE OF USERS WHOSE EPISODE OF CARE WAS CLOSED WITHIN 18 WEEKS ACROSS ALL SERVICES - QUARTERLY



Source: Frontier Economics analysis of the National Wheelchair Dataset

ANNEX C - QUALITATIVE ENGAGEMENT

As part of the wheelchair market study, qualitative engagement we conducted a series of semi-structured interviews and user focus groups from January 2022 to March 2022. This engagement was split into two waves in order to provide us with an opportunity to reflect on emerging findings and re-prioritise as needed.

We have provided in this Annex the topic guides that were used to structure the interviews. However, it is important to note that these topic guides were used as guide, and were adjusted depending on the expertise and discussions with the interviewee. This means that not all questions were asked to the interviewee.

The topic guides were informed by our evidence review, quantitative data analysis and discussions with Motability and the Wheelchair Alliance. This enabled us to develop a set of hypotheses about market functioning to test with stakeholders.

C.1 - TOPIC GUIDE

C.1.1 - WAVE ONE

For wave one, we developed two separate topic guides: (i) for commissioners and providers of care and (ii) for users of services. These topic guides were then tailored for each specific interview depending on the expertise and areas of interest of the interviewee.

COMMISSIONERS AND SERVICE PROVIDERS

Introduction

- Can you describe your organisation's role in the provision of wheelchair services?
- What is your role within this organisation?

Current approach

- We understand that there are a variety of models for commissioning wheelchairs/providing wheelchair services. Would you be able to outline the model of commissioning/provision that your organisation is using?
- Is this model the same for all user types and across the relevant geography/geographies?
- Has there been any change in the model across time?
- For larger providers, is there a variation in the model to commissioning/providing services across the country? Is there any difference in the interaction with commissioners depending on the model adopted?
- What proportion of your services are arranged through NHS versus private purchases?
- What is your relationship with the commissioners/providers, and how are responsibilities for commissioning/provision divided?
- Do you think there are clear lines of accountability with the current model? E.g., between providers and commissioners?
- What are the advantages and disadvantages of the current model that is adopted?

- Are there economic challenges e.g., with funding mechanisms?
- Does the current model result in any geographic variation?

Market functioning

- What is the role of competition? Is there any competition between NHS providers, charities and profit-making organisations?
- What are the implications for competition in the market and consumer choice?
- Are there any barriers to competition? E.g., are there any barriers to entry?
- How efficient do you think the current service model is?
- Does the current model have sufficient incentives in the system to encourage efficient allocation of resource and timely services?
- Have there been any changes to the efficiency of services over time?
- Have there been changes to the current model or adaptations over time?
- Does the current model allow for innovations?
- What changes could be made for the model to be better able to foster innovation?
- Is the funding and resource, such as the workforce, sufficient to be able to provide a quality service?
- What changes could be made to improve funding and resources available?
- Do you think the current model provided transparency and accountability?
- What improvements could be made to improve the transparency and accountability of services?
- Do you think the current model efficiently disseminates information?
- What improvements could be made for better information dissemination?

Impact on wheelchair users

- How well do you think the current service model meets the needs of wheelchair users? For example:
 - Is the assessment process sufficiently structured?
 - Are services provided in a timely manner?
 - Do you think services appropriately consider different user needs?
 - Have the services provided considered the needs of carers?
 - Have you been provided with training as part of the service?
 - Do you think these services have adopted a 'holistic view'?
 - What do you think of the quality of equipment provided by the NHS? Have you had the need to purchase equipment privately because of the quality of equipment provided?
 - Have you been provided with effective service maintenance?
- Do you have views on the consistency of the services that are provided?
- What do you think are the main implications of the current model on wheelchair users?
- Are there any geographic variations in the quality of care? e.g., in the eligibility criteria, definition of priorities and care pathway.
- Are there any variations in the care received for different user groups e.g., across user needs and user demographics?

Impact of policy incentives and wider factors

- What impact has the national wheelchair tariff had?
- Has the tariff helped to facilitate a better understanding of wheelchair services?
- Has the tariff helped provide care for different categories of need (low, medium and high)?
- What has been the impact of the model wheelchair specification?
- Has the standard helped clarify roles between CCGs and service providers?
- Has your area implemented personal wheelchair budgets?
- If not, why not?
- If yes, what has the impact of the introduction of personal wheelchair budgets?
- Do you think personal wheelchair budgets have improved the wheelchair user experience/ improved the allocation of funding?
- In terms of wider factors, has Covid-19 or Brexit resulted in any impact on services provided?

Opportunities to improve

- What areas do you think could be improved in the current model?
- Are there any specific innovations that you recommend for improving the quality of care?
- As part of our review of existing evidence, we found a number of specific recommendations such as the introduction of national waiting target times, improvements to information access, changes to funding (e.g., increased budget for powered wheelchairs, increased funding for maintenance), development of more holistic service and proactive ordering.
- Do you agree with these recommendations?
- Are there any you see as particularly important?
- Are there any interactions between commissioning, service providers and wheelchair users that could be improved?
- What do you think are the potential impacts for wheelchair users of the suggested improvements/ innovations?
- Are there any current barriers preventing the adoption of the discussed innovations/ recommendations?
- What could be done to minimise these barriers?

WHEELCHAIR USERS

Quality of service

- How well are current ways of accessing wheelchairs working?
- What is working well? why?
- What doesn't work very well and you think should be changed?
- Do you have any idea what might be causing issues?
- How was your experience at different stages of the pathway? What worked well and what not so well?
 - Referral;
 - Initial assessment;

- Other appointments;
- Handover;
- Maintenance/repair
- Has the current model impacted your ability to take part in education, training or employment?
What are the impacts of the current service on your family?

Impact of policy incentives

- Have you used a personal wheelchair budget? If not, why not?

Opportunities to improve

- What areas do you think could be improved in the current model? What do you think works well with your service?

C.1.2 - WAVE TWO

POOLED FUNDED MODELS/ PERSONAL WHEELCHAIR BUDGETS

- To what extent do CCGs currently collaborate with other local services such as social care / community care, education and housing services?
- To what extent is collaboration with local services encouraged through personal wheelchair budgets?
- What are the potential benefits of collaboration with other local services?
- E.g., are there potential efficiencies?
- Are there particular local services where collaboration is most needed?
- What are the key barriers to collaboration?
- What could be done to further encourage collaboration across services within CCGs?

ROLE AND SCOPE OF REGULATION

- What current regulation exists at your stage of provision? What is your perception of the wider scope of regulation across wheelchair provision?
- How does the current level of regulation compare to comparable services?
- How effective is the current levels of regulation in wheelchair provision? Are there any critical gaps?
- What is the potential role of regulation in wheelchair services? What forms could this regulation take?
- What is the anticipated impact of regulation on the functioning of wheelchair services and on end-users?

ROLE OF OUTCOME-BASED MEASURES

- To what extent are outcome-based measures currently adopted?
- To what extent have outcome-based measures increased in adoption following the model wheelchair specific?
- What are the potential impacts (both positive and negative) of outcome-based measures?

- Do outcome-based measures encourage holistic care?
- Do outcome-based measures have a role in improving the communication available for users to providers of care and CCGs?
- What are the potential barriers to adopting outcome-based measures?
- What is the potential impact of adopting outcome-based measure on the workforce/providers of care?

ELIGIBILITY CRITERIA

- How would you describe the features of the eligibility criteria adopted in your area? Are there any unique features in comparison to other CCGs?
- To what extent do you think the eligibility criteria needs to be tailored to the local area?
- To what extent is the current eligibility criteria set to match available budget rather than clinical need?
- To what extent do you think there are inconsistencies in the eligibility criteria across CCGs?
- Do the current eligibility criteria result in any unmet need or exclude particular groups?
- Do you think there are any advantages to standardising the eligibility criteria across CCGs?
- Do you think there is a potential trade off with standardising the eligibility criteria with the flexibility of the service?

ROLE OF REGIONAL WHEELCHAIR NETWORKS

- What is the current role of regional wheelchair networks in the provision of wheelchair services?
- What level of influence do regional wheelchair networks have in the provision of wheelchair services?
- How do regional wheelchair networks interact with other stakeholders in wheelchair provision (e.g., CCGs, providers of care, end-users)?
- What are the benefits of regional wheelchair networks?
 - To what extent can regional wheelchair networks be used to increase collaboration and shared learnings across wheelchair services?
 - Are there any potential economies of scale to be made through regional wheelchair networks?

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