How Does Access to **Community Health Services** for Older People Vary Across the Midlands?

Produced for the Midlands Decision Support Network

Prepared by Andrew Jones, Steven Wyatt, and Fraser Battye | The Strategy Unit

April 2024

The Strategy Unit.

Midlands Decision Support Network

Document control

Document Title	How Does Access to Community Health Services Vary Across the Midlands?
Prepared by	Andrew Jones, Steven Wyatt, Shiona Aldridge, Freddie Finlay, Fraser Battye
Checked by	Fraser Battye
Date	May 2024

Table of Contents

Executive summary

Community health services provide invaluable clinician-led support to people with a range of care needs. They include services such as district nursing, community podiatry, intermediate care, community physiotherapy and falls prevention services. Care is often delivered in people's homes, and around 60% of community services activity supports those aged 65 and over.

The main, and most immediate, source of value from community services is to the patient. For example, an older person with an existing head injury might require a visit from a district nurse, who will be able to check and dress the wound, providing relief and aiding recovery.

A second source of value is to other health and care services. For example, by reducing avoidable admissions and facilitating prompt hospital discharges, community services may ease the pressure on urgent care services, thereby helping the wider health system to work effectively.

Despite this importance, relative to care provided in hospitals, very little is known about the scale and distribution of community services. There is scant information on how access to community services varies according to where a person lives, and there is less data still on how access varies by social or demographic group.

This lack of data hampers planning. Integrated Care Boards (ICBs) in the Midlands therefore commissioned this report, through the Midlands Decision Support Network, to examine community services for people aged 65 and over, in terms of their:

- **Scale and concentration**. How much care is provided? How has this changed over time? To what extent is care concentrated or distributed?
- **Socio-economic distribution**. Which population groups receive the most care?
- **Effect on demand**. (How) have changes in community services provision affected pressures in urgent care?

Lack of data also hampers analysis. Our primary source for this work was the Community Services Data Set (CSDS). Whilst acute health care datasets have existed for up to 30 years, the CSDS was established just six years ago. As a relatively immature and underdeveloped resource, the quality and completeness of CSDS data varies considerably.

Notwithstanding caveats following from this, our findings in relation to the scale and concentration of services were that:

- In 2023, community services commissioned by Midlands ICBs provided 9.1 million contacts to half a million individuals aged over 65. Given a total Midlands over-65 population of two million, this level of provision equates to 4.5 contacts per person, per year.
- Having accounted for differences in the age and sex structure of populations, we found that Midlands ICBs with the highest community services contact rates delivered almost twice as many contacts per head as those with the lowest rates.
- Midlands ICBs allocated community services contacts in different ways. Some appeared to target high-need individuals, while others chose to distribute resources more widely.

To examine the distribution of services, we looked at access to community services following discharge from hospital. Having

controlled for various demographic, geographical, clinical, and service usage factors, we found that:

- Patients living in deprived areas had better access to post-discharge community services than those from less deprived areas. This finding is at odds with most equity studies of UK health services, which typically conclude that access to planned services favours the most affluent.
- Relative to the White ethnic group, access to community services after hospital discharge is worse for patients from Bangladeshi, Pakistani, and Chinese backgrounds.
- Men have marginally better access to community services than women.

Finally, we analysed the effect of community services provision on demand for urgent care. The result was counter-intuitive. We found that a decrease in community service contact rates was associated with a decrease in emergency admission rates. Areas with the largest decreases in community services contact rates tended to have the largest reductions in urgent care use. This effect was small but statistically significant.

The nature of these analyses was exploratory. Lack of existing knowledge, and expected problems with data quality, meant that we focused more on the question of what could be said than on generating definitive answers and recommendations.

Nonetheless, we see several implications of this work for Midlands ICBs:

- The wide variation in provision between ICBs opens up space for discussion about the extent to which these differences follow from factors such as population need, geography and strategy - or factors such as lack of data with which to plan. ICBs may

therefore wish to consider whether they commission adequate levels of community services and/or the correct mix of contacts to meet their population's needs; looking at this comparatively (with other Midlands ICBs) is likely to be fruitful.

- ICBs may wish to liaise with community service providers and patient groups to understand and address the specific ethnic inequities revealed by the analysis. Our analysis cannot address the 'why' question here; so qualitative research may also prove useful.
- Caution is necessary on the finding that reductions in community services were associated with reductions in emergency admission rates. More research is needed to understand this relationship, and, via the National Institute for Health and Care Research, more research is coming. In the meantime, ICBs may wish to work with providers of community services to ensure that thresholds for escalation to hospital services are appropriately calibrated.
- Data coverage and quality need to improve. Too little is known about community services. The data that exist are patchy, and so they are not used, and so they remain patchy. We therefore suggest that ICBs work with their community service providers to address this locally, making use of work already in train nationally.

1. Introduction

Community health services provide invaluable support for older people with a range of health care needs. These services also keep local health systems working efficiently.

Despite this importance, comparatively little is known about the scale and distribution of community services. The NHS may consequently fall short when it comes to monitoring and planning these services. In particular, the NHS has a duty to ensure that individuals with equal levels of need have an equal chance of accessing support, irrespective of their personal characteristics or the area in which they live (DHSC, 2023).

Integrated Care Boards (ICBs) in the Midlands therefore commissioned this report, through the Midlands Decision Support Network, to better understand how access to community services varies across the region. We were asked to focus on services for older people (taken to be those aged 65 and over).

In part, the analysis was exploratory. Given the known limitations imposed by the available data (discussed below), we set out to investigate what could be said of community services in terms of their:

- **Scale and concentration**. How much care is provided? How has this changed over time? To what extent is care concentrated or distributed?
- **Socio-economic distribution**. Which population groups receive the most care?
- **Effect on demand**. (How) have changes in community services provision affected pressures in urgent care?

1.1 What do we mean by 'community services'?

In this report, we use the term 'community services' to refer to health care services led by clinicians, that are primarily delivered to people in their own homes.[1] A typical community service contact might involve a visit from a district nurse, or a house call from a physiotherapist who might provide manual therapy to help improve the patient's mobility.

These services are distinct from general practice and social care services (the latter focusses on supporting individuals with the tasks of daily living: washing, dressing, for example). Close operational integration across services is, however, likely to improve patient experience and the quality of care (Baxter et al., 2018).

Community services are commonly delivered by NHS Trusts, although many other statutory, voluntary, and private sector providers exist. Every month, these services help around half a million older members of the population (NHS Digital, 2023a).

Without such support services, older people with care needs in the community may see their health deteriorate to the extent that they are forced to seek urgent care. Equally, hospitalised patients may wait longer to be discharged.

Community health services are therefore *not only* seen as a way to improve the quality of care for patients. Indeed, by facilitating prompt hospital discharges and reducing avoidable admissions, community services may also ease the pressure on the urgent care services and keep the wider health system working effectively (Scobie and Kumpunen, 2023).

In effect, there are two main sources of value people see in community services:

1. The value to the patient (which is the primary and most immediate source of value); and
2. The value to the wider system of local health and care services.

1.2 Community health service policy

For several decades, health policy has promoted a greater role for community services. Current policy follows this trend, and both the Five Year Forward View and the NHS Long Term Plan have emphasised the need to enhance out-of-hospital care (of which community services is a large part) (NHS England, 2014; NHS England, 2019).

One instrument of this shift to out-of-hospital care is service integration. Integration requires community services to work closely with general practice and other health services. So, rather than facing a number of discrete and disconnected health contacts, a patient should experience a single package of support.

These packages of support are increasingly provided by multidisciplinary teams (MDTs), which may include GPs, district nurses, and allied health professionals (AHPs). The NHS Long Term Plan promised £4.5 billion of new investment in out-of-hospital care, with part of this expected to fund these expanded community MDTs (NHS England, 2019).

Yet, funding for community services has, historically, been highly constrained and the profile of community services remains lower than those of hospital-based services (Charles, 2019; Scobie and Kumpunen, 2023). This is likely due to several reasons. For one, the activities of community services are often hidden. This is true both literally (as contacts largely take place within people's homes), and from an administrative perspective (community services have typically been commissioned in 'block contracting' arrangements,

rather than on a "per contact" basis). Secondly, the various labels used to describe similar, often overlapping, aspects of community services (e.g., intermediate care, transitional care) may have contributed to a lack of understanding. Finally, national data on activity, quality, and spending for these services is limited. This makes analysis of these services - and thus attempts to seek funding or raise the profile – difficult. Thus, datasets remain comparatively unused and underdeveloped, and a negative feedback loop is created.

1.3 The Community Services Data Set and its limitations

Our primary source of data for this work was the Community Services Data Set (CSDS). Whilst acute health care (e.g., admitted patient care) datasets have existed for up to 30 years, the CSDS was established just 6 years ago. As a relatively immature and underdeveloped resource, the quality and completeness of CSDS data varies considerably. Moreover, any report that relies on the CSDS must acknowledge two of the data set's key limitations.

Firstly, not all community health activity is captured by the CSDS. The vast majority of community services are publicly funded (Scobie and Kumpunen, 2023), and we believe that the majority of these contacts are recorded in some form. However, the activity of many smaller providers (often those from voluntary and private sectors with small contracts) is not integrated into the dataset.

A greater problem may be that registered providers are currently obliged to submit only the barest minimum of information (NHS Digital, 2023c). Researchers attempting a basic study of community services with the CSDS are therefore hindered by the low quality of non-mandatory fields that are nonetheless essential to any analysis. For example, for around 1 in every 10 cases, we cannot tell whether a scheduled contact took place, or not (the *Attendance Status* value is

missing).[2] There are similar issues affecting the *Consultation mechanism* field, which provides information on the mode of contact.

Thus, due to the limitations of the CSDS, this analysis is not as detailed, or robust, as we might wish. However, having taken steps to mitigate quality issues (which included performing an extensive exploratory analysis and imputing missing data where appropriate), we are content that our measurements provide (at the very least) strong indications of the scale and distribution of community services across the Midlands. We believe that, when combined with local contextual information, these measurements will be of use to ICBs as they plan future community services.

1.4 Scope of this report

We examine community services that are provided to people aged 65 and over. This represents the majority (60%) of activity in this area (Scobie and Kumpunen, 2023). Examples of the services we expect to cover can be seen in Table 1. As this report was commissioned by the Midlands Decision Support Network, the work is Midlands focused. However, our analysis also involves models built from national data.

Services we aimed to capture in this report

- District Nursing
- Community nursing
- Community specialist nursing
- Community occupational therapy
- Community physiotherapy
- Community podiatry
- Community palliative care [1]
- Falls prevention services.
- Intermediate care [2]
- Community speech and language therapy [3]

1. Not bedded. 2. Not social care 3. For older people

Table 1. Community services that we aimed to capture in this report.

The report continues in the following sections:

- Section 2 describes the scale and concentration of community services provision in the Midlands.
- Section 3 examines the distribution of these services by socio-economic and demographic group.
- Section 4 looks at the effect community services have on demand for urgent care.
- Section 5 presents conclusions, implications and future analytical directions.

The main body of the report is supported by Appendices A, B, and C which provide technical details and supplementary information.

2. Scale and concentration of provision

This section provides a descriptive account of the scale of service provision across Midlands ICBs. It begins by examining variation in community services contact rates, before moving on to look at the mode of these contacts (face-to-face or remote) and the extent to which these contacts are concentrated.

2.1 Geographical variation in access to services

In 2023, community services commissioned by Midlands ICBs provided 9.1 million contacts to half a million individuals aged 65 and over. Given a total Midlands over-65 population of two million, this level of provision equates to 4.5 contacts per person, per year. The number of contacts commissioned by each ICB is shown in Table 2.

Unfortunately, as we see in Figure 1 (overleaf), the quality of CSDS data tends to deteriorate as we look back in time. This makes it difficult to estimate how activity levels have changed in recent years.

ICB	Community services contacts* (2023)
Birmingham and Solihull	844,000
Black Country	1,128,000
Coventry and Warwickshire	991,000
Derby and Derbyshire	1,245,000
Herefordshire and Worcestershire	561,000
Leicester, Leicestershire and Rutland	757,000
Lincolnshire	525,000
Northamptonshire	667,000
Nottingham and Nottinghamshire	1,091,000
Shropshire, Telford and Wrekin	382,000
Staffordshire and Stoke-on-Trent	950,000

*Estimate of contacts attended, to the nearest 1,000, based on CSDS data.

Table 2. Estimates of community services contacts (attended) in each ICB.

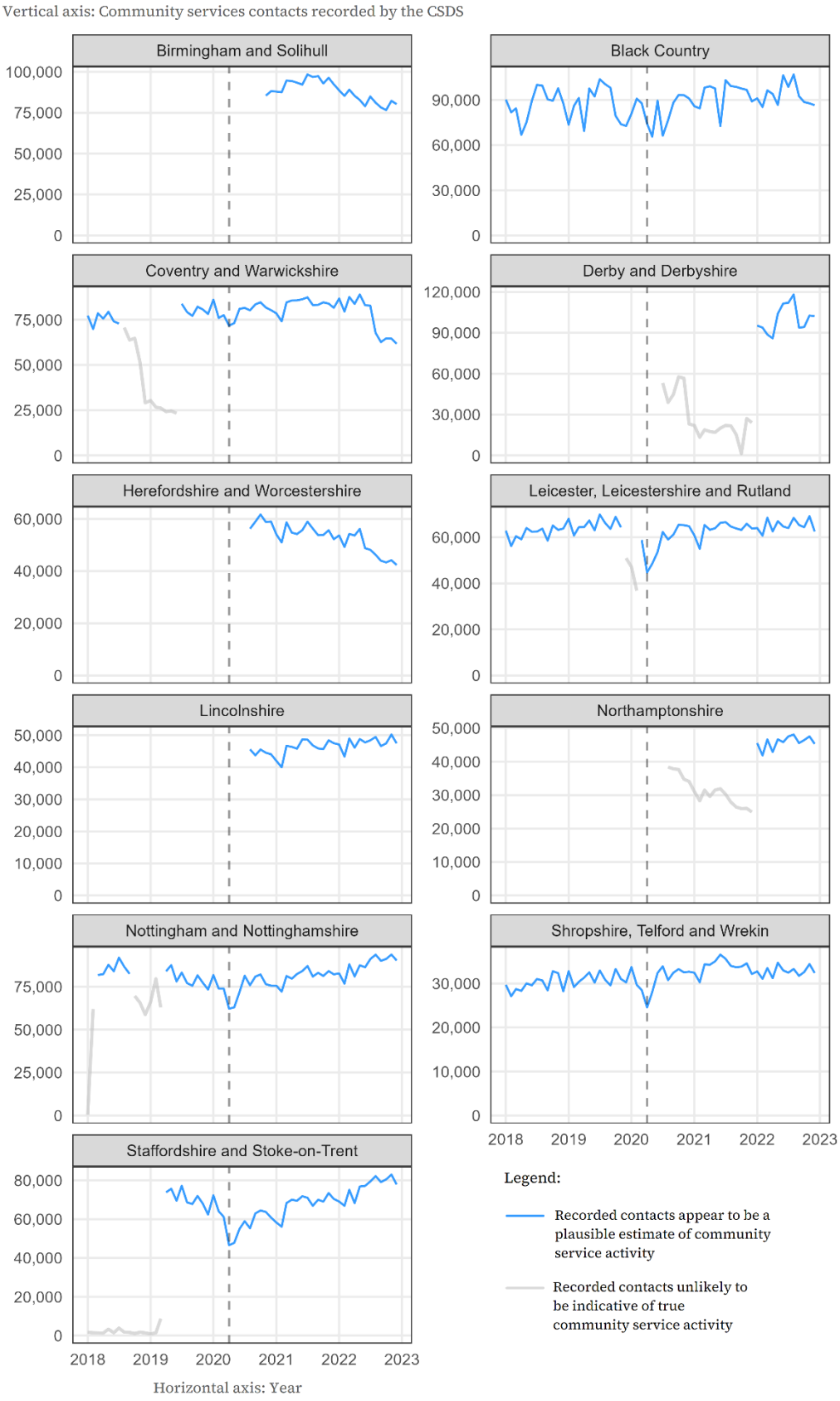


Figure 1. Estimated counts of community services contacts commissioned in each ICB between January 2018 and December 2022. Dashed vertical line shows April 2020 (start of the pandemic).

For 2023, however, the quality of provider submissions appeared sufficiently high (as demonstrated in Figure 2) for us to estimate how access to community services varied across Midlands ICBs.

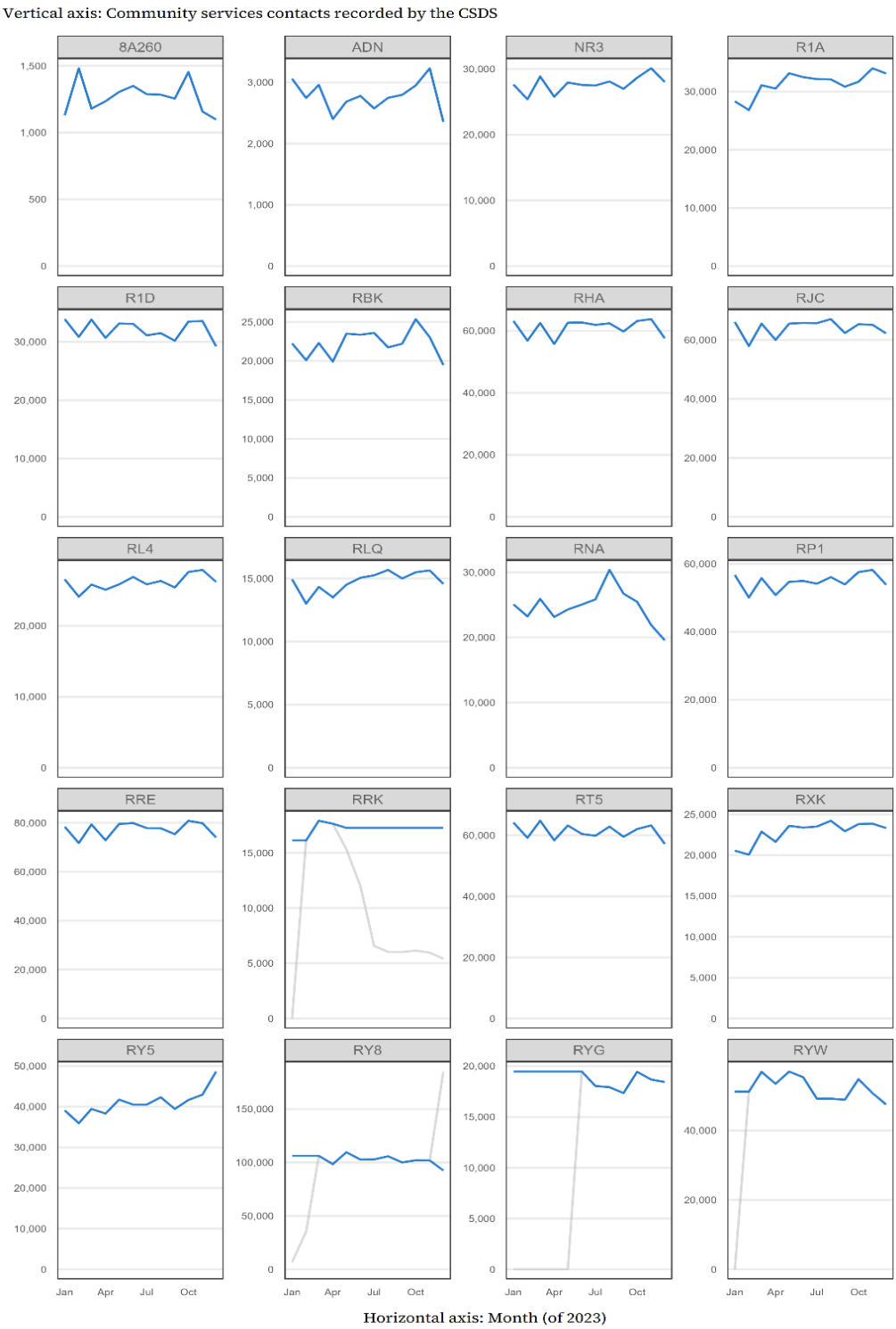


Figure 2. Community services contacts, by month, for Midlands' providers that delivered more than 8,000 contacts in 2023 (according to the CSDS). Our estimates are shown in blue: we sparingly used imputation methods to adjust anomalous counts from the CSDS (grey).

Figure 3 shows an age-and-sex standardised rate of contact for each ICB. This suggests that, in 2023, Midlands ICBs with the highest community services contact rates delivered almost twice as many contacts per head as those with the lowest rates.

This gap is large, but plausible if we consider that ICBs with the lowest rates are those with the highest proportions of older people living in a rural setting (Rural Urban Classification, 2021). When we looked at rates standardised by age, sex, and the Rural Urban Classification, the gap remained, but it was somewhat smaller.

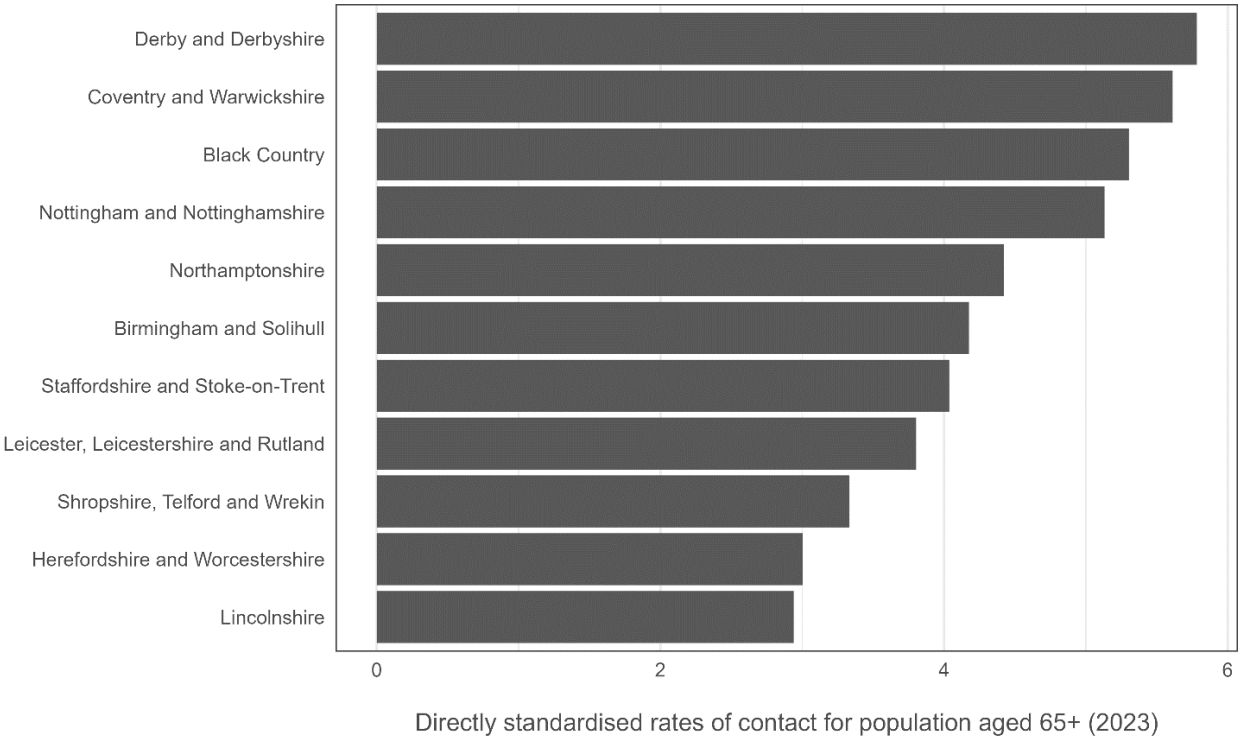


Figure 3. Age-and-sex standardised rates of community service contact across the Midlands, for the population aged 65 and over. Note that population sizes mean that confidence intervals would be barely visible on the graphic and we have therefore removed them.

Indeed, visits to rural communities are likely to require more time and resources than visits within urban or suburban areas. We might therefore expect ICBs with relatively large rural populations to have lower *face-to-face* contact rates than their peers. And, if it transpires that ICBs across the Midlands have similar rates for *virtual* contacts (a point we will examine later in this section), this would lead to the lower overall contact rates we see in Figure 3.

2.2 Concentration of provision

Extending this analysis, we examined the different ways in which Midlands' ICBs allocated community service contacts. Do ICBs tend to distribute care in similar ways?

Figure 4 shows that, in 2022, patients who required 25+ contacts represented between 10% and 27% of all persons in contact with community services, depending on the ICB. We calculated that this same "high provision" group claimed between 66% and 82% of all *contacts* offered in an ICB.

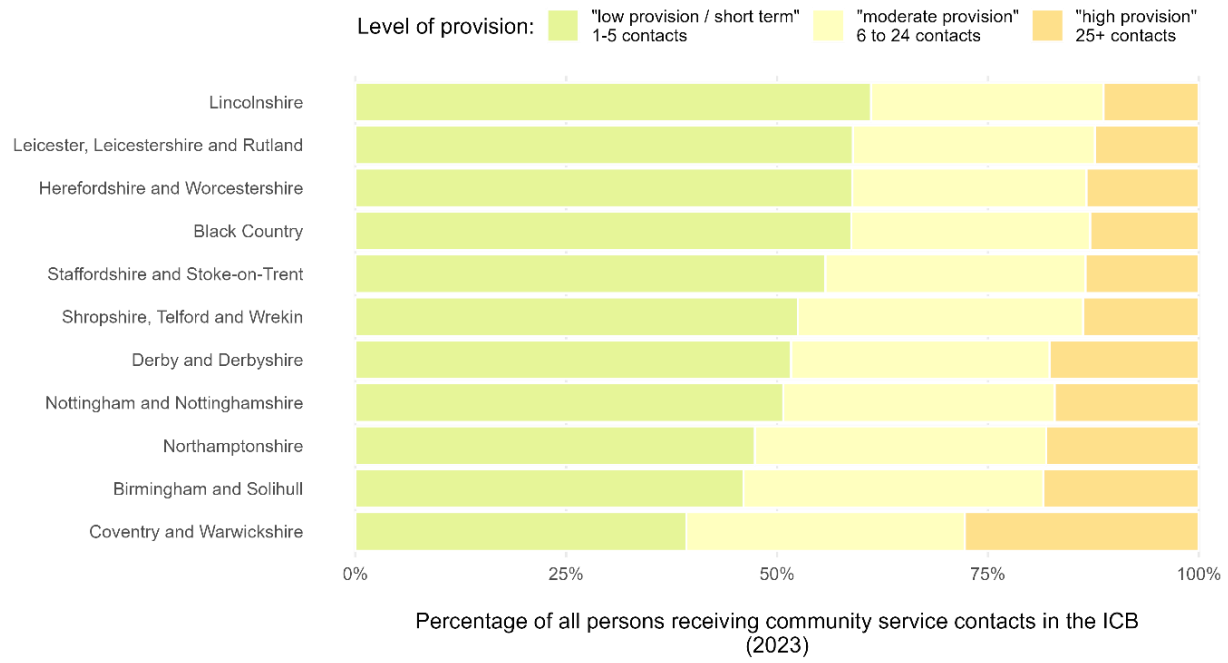


Figure 4. Persons in each "provision" group as a percentage of all persons receiving community service contacts in an ICB.

These results indicate that some ICBs concentrated resources on a smaller number of (presumably) high-need patients, whereas other ICBs distributed resources more widely.

One explanatory theory could be that ICBs whose resources were most constrained chose to concentrate on high-need individuals. The theory being that a system will prioritise those with greatest need and extend care to others where resources allow. Yet, we found no firm evidence to suggest that allocation practices were linked to resource levels.

2.3 Mode of contact

The CSDS's *consultation mechanism* field allows us to look at how access to community services across ICBs varied by mode of contact – specifically, whether the contact is delivered face-to-face or virtually.

This query also sheds light on differences in providers' recording and submission practices. Figure 5 indicates that for the majority of ICBs in the Midlands, the proportion of contacts coded "face-to-face" exceeds the estimated national average of 70% (Scobie and Kumpunen, 2023).

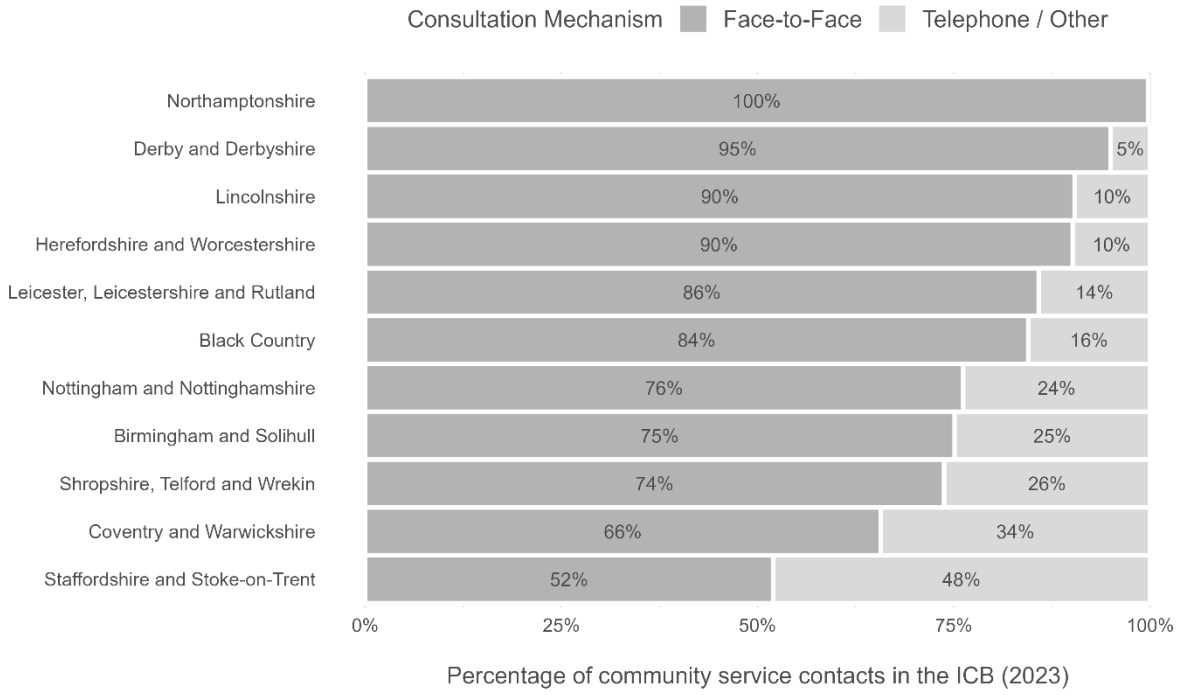


Figure 5. Proportion of contacts coded face to face (grey) versus other mechanisms (light grey), by ICB.

Notable exceptions here are Staffordshire and Stoke-on-Trent (52% face-to-face), and Coventry and Warwickshire (66% face-to-face). This does not appear to be a data quality issue. In both ICBs, we found that a high proportion of contacts are explicitly coded as either "telephone" or "other". Looking at Northamptonshire, on the other hand, it appears probable that almost *all* contacts are coded as "face-to-face", regardless of the actual mode of contact.

We also see that, as suggested above, ICBs who commission services for a large number of rural communities tend to deliver a lower proportion of face-to-face contacts than their peers.

Finally, we contrast ICB rates for all consultation mechanisms with rates for face-to-face consultations only. Figure 6 (overleaf) suggests that Coventry and Warwickshire and Staffordshire and Stoke-on-Trent maintained moderate-to-high overall contact rates because of their frequent use of virtual contacts. This strategy appears to be used to consolidate support for existing patients. In any case, ICBs that offer a high proportion of virtual consultations place great trust in the quality and effectiveness of these alternative mechanisms.

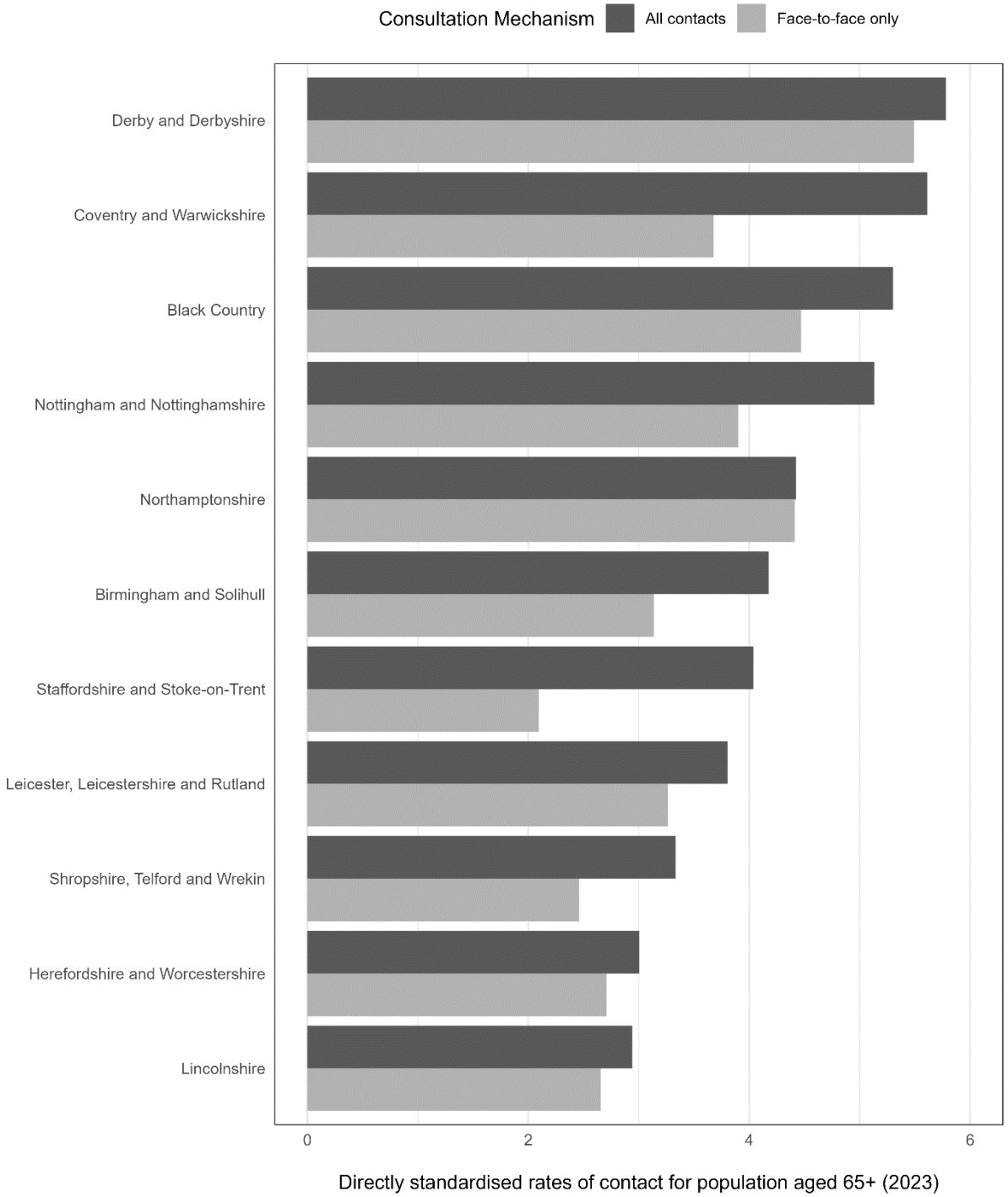


Figure 6. Age-and-sex standardised community services contact rates across the Midlands, for the population aged 65 and over. Rates for all consultation mechanisms are shown in black, while face-to-face only rates are shown in grey. From examining counts of face-to-face contacts, the indications are that Northamptonshire ICB may have a lower face-to-face contact rate than we see here. Note that population sizes mean that confidence intervals would be barely visible on the graphic and we have therefore removed them.

3. Socio-economic and demographic distribution of services

Having provided a broad sense of the scale of community services provision, we now turn to the way in which these services are distributed across socio-economic and demographic groups. We do this through the lenses of deprivation, gender, and ethnicity.

3.1 Method

The methods we employed to investigate variation in these dimensions differed from those used in our geographical analysis. In this section we examine differences in access to community services *following hospital discharge*. Whilst this approach restricted the scope of our analysis, it allowed us to make use of high-quality hospital admissions data to better understand, and control for, differences in clinical need for a service.

We linked community service and admitted patient care records from across England and identified patients aged 65 years or over, who were discharged from hospital in June or July 2022. [3,4] We then looked at which patients went on to receive at least one *face-to-face* community services contact within 30 days of discharge.

Our aim was to compare contacts across socio-economic groups (using the Index of Multiple Deprivation 2019 for Lower Super Output Areas), by sex, and by ethnicity.

We therefore estimated the odds of each of our population subgroups receiving a community service contact (relative to a reference category), and controlled for differences in need across subgroups using six variables:

1. The patient's age;
2. The duration of the patient's stay in hospital;
3. Medical conditions that the patient had on admission;
4. Whether the patient was admitted on a planned or emergency basis;
5. The medical specialty that treated the patient;
6. The number of face-to-face community service contacts that the patient received in the 30 days before admission.

Having controlled for these factors, we made the assumption that any residual difference in need for community services across these subgroups is negligible. [5]

3.2 Deprivation

The results of this analysis suggested that people living in more deprived areas are more likely to receive a face-to-face contact from community services within 30 days of discharge than people living in less deprived areas.

As we see in Figure 7, there is a clear gradient to this effect: people living in the least deprived two quintiles are approximately 13% less likely to receive a contact than those living in the most deprived areas.

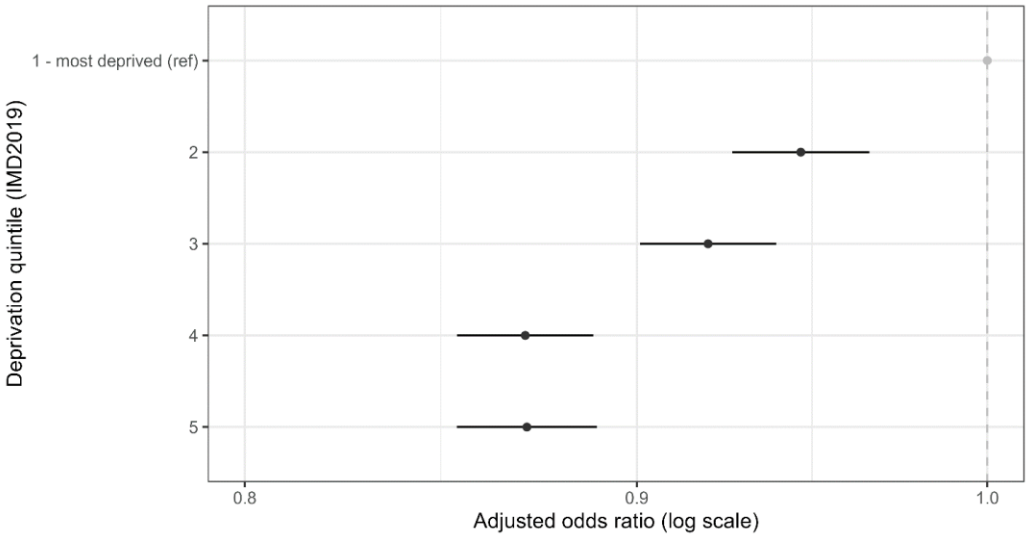


Figure 7. Adjusted odds ratio of community service contact, by deprivation quintile.

More widely, the balance of evidence suggests that people living in the most deprived areas use planned services less (and unplanned services more) than those living in the least deprived areas. We have assumed that community services are planned (either before or upon discharge). And we found that people living in more deprived areas have *better* access to these services.

This makes our findings unusual. It is possible, therefore, that our assumption is not wholly valid and that many of the community services we observed have, in fact, been implemented to solve a problem that emerged after discharge. This would mean that these services were reactive, and largely unplanned.

3.3 Gender

Women are marginally (2.6%) less likely to receive a face-to-face contact from community services within 30 days of discharge than men (Figure 8). The effect is statistically significant, however.

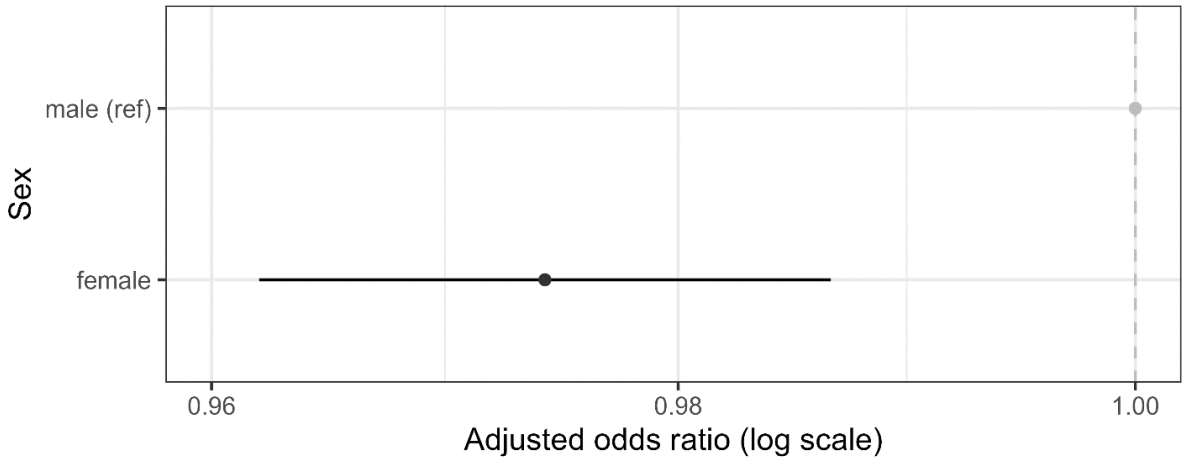


Figure 8. Adjusted odds ratio of community service contact, by sex.

3.4 Ethnicity

Figure 9 shows that there is clear variation in equity of access by ethnicity. Compared to White British patients, patients from some ethnic groups were significantly less likely to receive a face-to-face contact from community services within 30 days of discharge. Bangladeshi patients were 32% less likely, Pakistani patients 12% less likely, other Asian patients 7% less likely, and Chinese patients were 18% less likely than their White British counterparts.

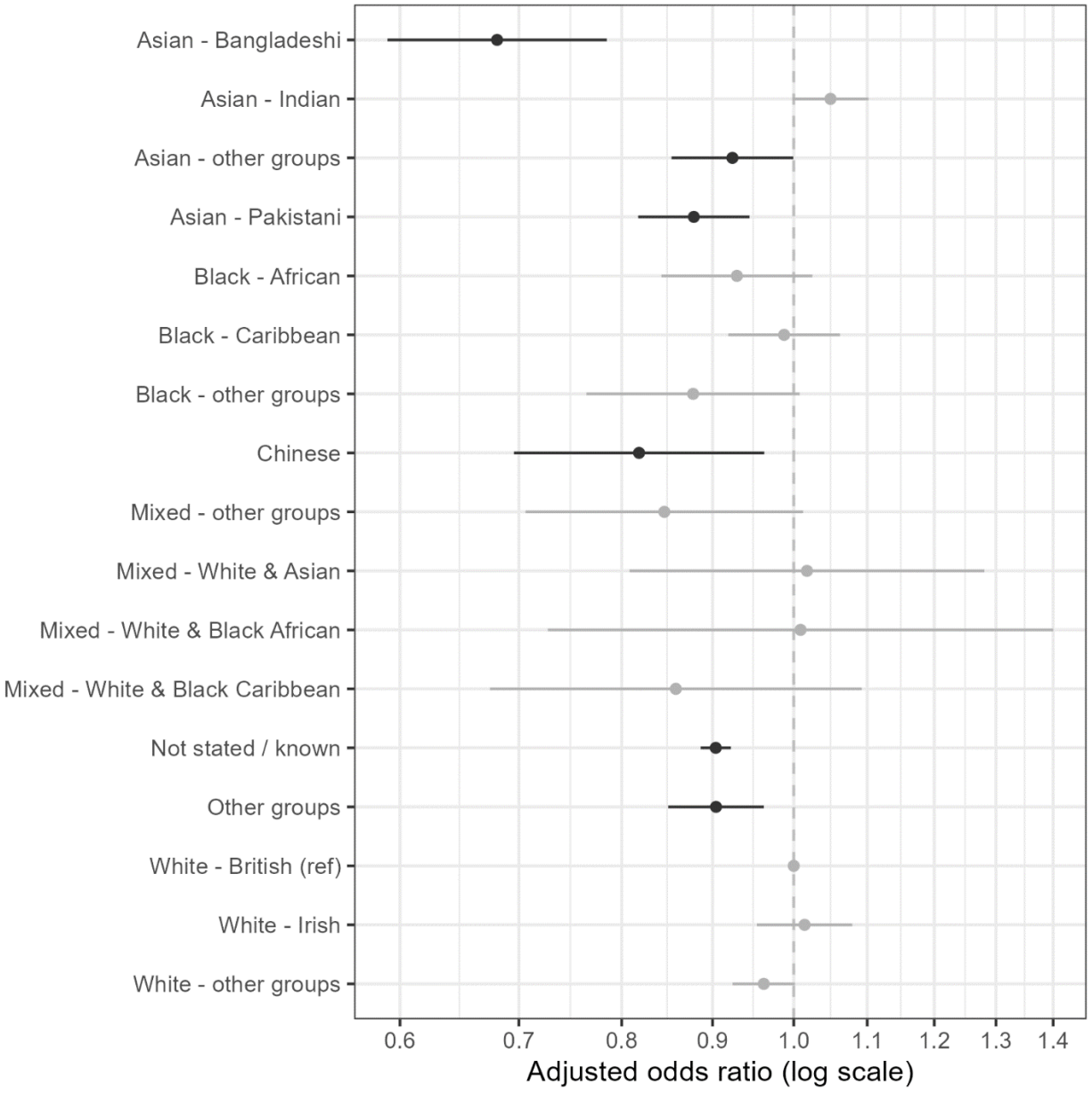


Figure 9. Adjusted odds ratio of community service contact, by ethnic group.

Patients from other unnamed ethnicities, or those whose ethnicity was not given or not known, were also less likely to receive a community service contact after hospital discharge. All other ethnic groups had levels of access that were not significantly different to those for the White British group.

4. Effects on demand for urgent care

Community services provide essential support to patients at home, with one aim being to reduce demand for urgent care services. Yet, leveraging the scientific literature to understand the broad relationship between community services and urgent care use appears to be of limited value (see our evidence review in Appendix C). For one, interventions are often so specific - and the remit of most community services so broad – that it tends to be difficult to generalise findings beyond the context of a given study. In this section, we therefore employ the CSDS to try to answer the question: does greater provision of community health services decrease use of urgent care?

4.1 Method

Using the CSDS, together with Secondary Uses Service (SUS) data, we investigated whether changes in the supply of community services between 2018 and 2022 led to changes in demand for urgent care.

While community services aim to influence (reduce) use of urgent care, it is also possible that demand for urgent care might influence the provision of community services. For example, an increase in hospital admission rates might increase the provision of post-discharge community services. As we could not rule out this possibility of reverse causality, we examined several urgent care outcomes.[7] Our primary urgent care outcome was all-cause emergency admission rates. We list both primary and secondary outcomes in Table 3.

Outcome (as rate)	Rationale
1. All-cause emergency admissions	As discussed throughout the report.
2. Emergency admissions with a non-zero length of stay	Same day emergency care has increased considerably in recent years. Will we see the same effect if we remove this activity?
3. Ambulatory care sensitive (ACS) admissions	ACS admissions are admissions that might potentially have been avoided if the patient had greater support from community and primary care services.
4. Emergency readmissions with 30 (90) days	Emergency readmissions (shortly after discharge) may potentially be avoided with support from community care services.
5. Emergency admissions with a long stay (28+ days)	Community care services may facilitate earlier discharges.
6. ED attendances	ED attendances may potentially be avoided with support from community care services.

Table 3. Our six urgent care outcome variables.

We chose a 'panel regression' approach. Our data set covered a five-year period and included measures of our six outcome variables for a sample of 38 geographical areas. These geographical areas covered a total of 2.2 million people aged 65 and over. More detailed notes on the approach we took, and the reasons for this approach, can be found in the appendix.

4.2 Results

We saw great variety in five-year trends, by area, for both community service contact rates and all-cause emergency admission rates (Figure 10, overleaf). On aggregate, however, activity of both types was lower in 2022 than in 2018. Community services contact rates dropped by 4%, while all-cause emergency admissions fell by 8% (and almost 10% between 2019 and 2022). This latter result reflects the national picture (Cavallaro et al., 2023).

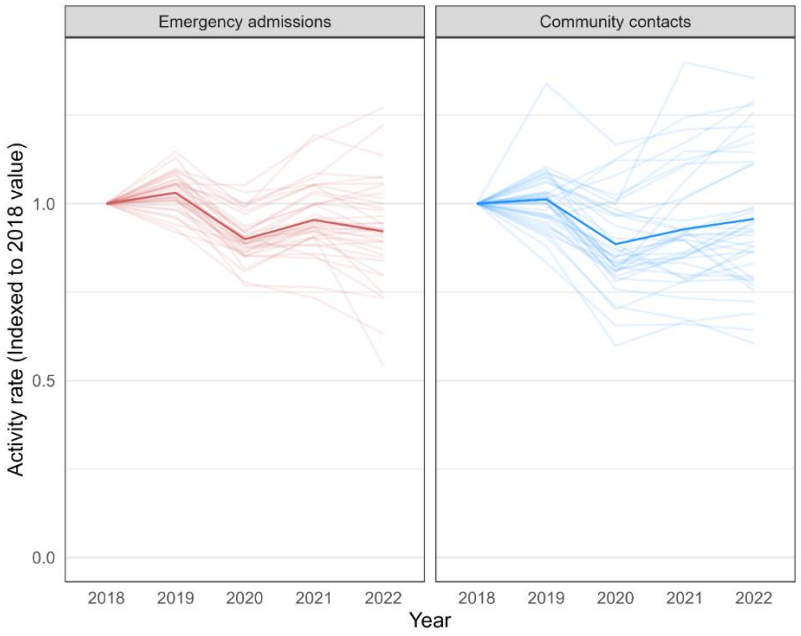


Figure 10. Trends in all cause emergency admission rates (left panel) and community service contact rates (right panel) for our 38 geographical areas. Each trend has been indexed to its 2018 value. The trend in the aggregate rate, also indexed to 2018, is highlighted in each panel.

Our analysis indicated that, over the study period, a *decrease in community service activity* was associated with:

- a *decrease* in all-cause emergency admissions;
- a *decrease* in emergency readmissions (at 30 and 90 days); and
- a *decrease* in emergency department attendances.

In other words, we found that those areas with the largest *decreases* in community service contact rates tended to have the largest *decreases* in urgent care use.

The effect was small, but statistically significant. The model indicates that if community service provision was reduced by 10% (a large decrease), we would see:

- all-cause emergency admissions decrease, but only by 1.3 %;
- emergency readmissions decrease by 2.0 %; and
- emergency department attendances decrease by 1.6 %.

On the other hand, we found *no statistically significant relationship* between community service contact rates and rates of ambulatory care sensitive (ACS) emergency admissions, or all-cause emergency admissions with a non-zero length of stay.

4.3 Discussion

With the falling supply of community services in recent years, we might expect – all else being equal - emergency admission rates to have increased.

Yet, on investigating the relationship between community service provision and urgent care use over the last five years, we saw the opposite effect: a decrease in community service contact rates was associated with a small, but statistically significant *decrease* in emergency admission rates. That is, areas with the largest decreases in community service contact rates tended to have the largest reductions in urgent care use.

The above results are highly counterintuitive. There are several possible explanations.

a. Data quality and generalisability the analysis

The quality of CSDS data is highly variable and tends to deteriorate as we look backward in time. Quality issues are due not only to the relative immaturity of the CSDS and to the diversity of organisations providing services, but also to the disruption to data flows caused by the pandemic.

That said, we were able to identify a subset of geographical areas in which provider submissions appeared to be largely complete and consistent since the inception of the CSDS. However, this approach presents two clear risks. The first is that the relationship we observed in this subset of areas was not representative of the relationship nationwide. Secondly, given the limitations of the CSDS, it is quite possible that, despite appearances, the data we

observed for some (or all) of our chosen areas were incomplete to the extent that this affected the relationship we were examining.

Data quality issues also influenced other aspects of our investigation. Low levels of completeness in key CSDS fields prevented us from differentiating between different community services. And whilst some community services (e.g. district nursing) might be strongly associated with our outcome variables, other services (e.g. speech therapy following a stroke), though no less valuable, may have little influence on urgent care use. As we were obliged to model the relationship between urgent care use and *all* face-to-face community service activity (rather than just those services targeting admission avoidance) it is possible that a signal was lost amongst the noise.

b. Method-related influence

Yet another explanation for our findings stems from the limitations of our method. The panel regression approach that we employed does not control for omitted variables that differ by area *and* change over time. We can, however, imagine that the number of variables falling into this category – and the *impact* of these variables – will have increased substantially as a consequence of the varied societal and institutional responses at different stages of the pandemic. (Local lockdowns and highly varied healthcare seeking behaviour are two examples.)

Our model suggests that a decrease in community service provision is associated with a decrease in urgent care use. However, we cannot say that community service provision is the dominant causal effect due to the potential influence of the type of unmeasured variable outlined above.

It is possible that an alternative method, such as instrumental variables regression, might have been more appropriate in the

circumstances. Instrumental variables regression allows consistent estimation when there is reverse causality and possible omitted variable bias, and it may have given us a different result.

c. Identification of unmet need

If we were able to rule out data quality issues, we could yet offer other explanations for what we observed. While the observations may be surprising, there is notable precedent. Several UK-based studies investigating the effect of community service provision (or other out-of-hospital activity) on urgent care use have reported comparable results (Steventon et al., 2011; Crawford et al., 2018; Liu et al., 2021; Seamer et al., 2019).

A common rationalisation in these cases involves the idea that community (and social care) services continually identify unmet need in the population. In other words, a health professional who visits a patient to address one health problem may uncover others. These other problems may then require urgent care and a hospital admission.

But a fall in community service contact rates – as we have seen in recent years – may mean that unmet need goes *unnoticed*. This, in turn, might result in *reduced* demand for urgent care.

We might also posit that well-informed (and perhaps also risk-averse) health professionals generally have a lower threshold for action than patients left to make their own decisions. Thus, if community health professionals are less likely to make contact with patients – as the trend indicates – then any action will be left to the patient, and urgent care use for all types of need (met and unmet) may fall.

Steventon et al. (2011) state that "more contact between individuals and health care professionals may [result] in more hospital activity." Presumably, the opposite is also true.

d. Substitution

We could also question whether developments in informal (unpaid) care and social care might have offset the decreased provision of community services (Lyu et al., 2023). For instance, informal care (from within the household) may have been preferred during the COVID-19 pandemic. Evidence suggests, however, that at a national level, informal care and social care levels have, in fact, fallen over the last decade (Bottery et al., 2023; Office of National Statistics, 2023).

5. Conclusions, implications, and future analytical directions

This final section draws together some of the main conclusions of the analysis. Notwithstanding the exploratory nature of the work, it then outlines a set of implications for ICBs in the Midlands. The section ends with ideas for analyses we might have carried out if data quality in the CSDS had been better.

Conclusions

In 2022, Midlands ICBs with the highest community service contact rates delivered almost twice as many contacts per head as those with the lowest rates. In some cases, a high virtual contact rate masked a relatively low face-to-face rate.

Midlands ICBs allocated community service contacts in different ways. Some ICBs had more of a focus on high-need individuals; others chose to distribute resources more widely.

Controlling for various demographic, geographical, clinical, and service usage factors that might influence need for community services, we find that some patient groups have a significantly greater chance of receiving a post-discharge contact than others.

On average, patients living in deprived areas have better access to community services than those from less deprived areas. This finding is not only positive; it is unusual. Most equity studies of UK health services conclude that service access favours the most affluent. The finding suggests that community services are contributing to wider efforts to reduce inequalities in health outcomes. But this result should not be taken as full reassurance, since we were unable to fully control for differences in need.

Our analysis also indicated that men have marginally better access than women, and we found that access to community services after

hospital discharge is poor for patients from Bangladeshi, Pakistani, and Chinese backgrounds.

Finally, we analysed the effect of community services provision on demand for urgent care. The result was counter-intuitive. We found that a decrease in community service contact rates was associated with a decrease in emergency admission rates. Areas with the largest decreases in community services contact rates tended to have the largest reductions in urgent care use. This effect was small but statistically significant.

Implications

The nature of these analyses was exploratory. Lack of existing knowledge, and expected problems with data quality, meant that we focused more on the question of what could be said, than on generating definitive answers and recommendations.

Nonetheless, we see several implications of this work for Midlands ICBs:

- The wide variation in provision between ICBs opens up space for discussion about the extent to which these differences follow from factors such as population need, geography and strategy - or factors such as lack of data with which to plan. ICBs may therefore wish to consider whether they commission adequate levels of community services and/or the correct mix of contacts to meet their population's needs; looking at this comparatively (with other Midlands ICBs) is likely to be fruitful.
- ICBs may wish to liaise with community service providers and patient groups to understand and address the specific ethnic inequities revealed by the analysis. Our analysis cannot address the 'why' question here; so qualitative research may also prove useful.

- Caution is necessary on the finding that reductions in community services were associated with reductions in emergency admission rates. More research is needed to understand this relationship, and more research is coming from the National Institute for Health and Care Research. In the meantime, ICBs may wish to work with providers of community services to ensure that thresholds for escalation to hospital services are appropriately calibrated.
- Data coverage and quality needs to improve - too little is known about community services. The CSDS contains more than 150 data items, but not all items are of equal value to ICBs. We suggest that ICBs work with their community service providers to ensure that two fields, *Attendance Status* and *Consultation Mechanism* are recorded completely in CSDS submissions by the end of 2024/25. Once the quality of these fields is resolved, we suggest that attention shift to the following fields: *Care Professional Staff Group*; *Primary Diagnosis; Clinical Contact Duration of Care Contact; and Ethnic Category*. This targeted approach, which aligns with item 4 of the Community Health Services Data Plan, will generate more benefit than broad encouragement to improve data quality.

Possible future directions for analysis

We end with ideas for analyses we might have carried out if data quality in the CSDS had been better.

- We analysed equity of access to community services after hospital discharge. If variables on age, sex, deprivation, ethnicity, and diagnoses had been recorded more fully in the CSDS, then we could also have explored equity of access to community services designed to avoid hospitalisations.

- We examined whether levels of community services, as a whole, reduced demand for urgent care services. If variables relating to the service/team, staff group, and diagnosis had been coded more fully and consistently in the CSDS, then it may have been possible to identify those services that are more or less likely to prevent urgent care use.
- If the Care Professional Staff Group variable had been more fully coded in CSDS, then it would have been possible to explore variation in staffing models and skill-mix that exist between services and areas.
- If variables relating to the referral date and service start date, along with data on the patient age, sex, deprivation, and diagnoses, had been more fully and consistently recorded in CSDS then it would have been possible to compare service thresholds and responsiveness between areas.
- If the clinical contact duration field had been more fully recorded in CSDS, then it would have been possible to estimate the ratio of travel and contact time, and therefore the impact of rurality on service productivity.

Appendix A: About the report

Why did we look at variation in *access* to services (and not variation in supply)?

Supply, in this healthcare context, means the services provided by a health system. In an effective health system, we would expect the supply of services to be equal to the health needs of the population (where need is the potential to benefit from these services).

Yet, while the supply of services may meet the needs of the population, those in need may struggle with physical, organisational, social, or cultural barriers that prevent them from *using* these services (Gulliford et al., 2002). These barriers might be greater for those living in certain areas or belonging to specific population subgroups. (And to improve access, and equity of access, a health system must understand and address these barriers.)

According to our definitions, then, supply is concerned with the provision of services, while access is about *use* of services. Despite this difference, it is common for both quantities to be estimated using measured activity levels.

The difference between supply and access may be considerable for community services, as we see a high proportion of non-attendances (which often indicates the inability of the *care professional* to attend a contact). Since, in this report, we are primarily concerned with contacts that took place, we are more likely to be measuring access levels (and variation in access levels) than levels of supply.

Why might we see variation in access to community services?

When counting the number of community service contacts across different populations and population subgroups, we expect to see variation. There are likely to be several sources:

- **Random variation (the role of chance)**
  Even in the fairest of systems, we will see variation. In our health system, services are composed of numerous clinical and administrative processes. And whilst providers seek consistency in each of these processes, complete consistency is, in practice, impossible. Random differences (random variation) in these processes are always present. Random variation is not associated with the characteristics of a patient or population.
  How have we accounted for this? Random variation - or the role of chance - cannot be eliminated. However, its effect can be quantified using statistical methods – for example, confidence intervals - to indicate the extent to which results might be attributable to chance.

- **Differences in need across populations.**
  Health need can be thought of as an ability to benefit from an health care intervention (Stevens et al.,2004). Within the general population there will be individuals who are fit and healthy, and others who require considerable support from community services. The proportion of individuals in these two groups is likely to vary by geographical area and demographic group.
  How have we accounted for this? In our analyses, we attempt to control for need by controlling for factors that might influence need. For example, in our geographical

analysis we control for age. In our demographic analysis we control for six factors.

- **Systematic - and clinically unwarranted - differences in individuals' ability to access a service.**
  Individuals belonging to particular population subgroups or living in certain areas might have greater access to community services than others, even after we take account of clinical differences between the groups. In many cases, such inequities are seen to reflect and reinforce systemic inequalities that are present in wider society.
  How have we measured this? Having controlled for need, and accounted for the role chance, we expect that any residual differences in supply are clinically unwarranted. We would suggest that these differences be further investigated.

Finally, when looking community health services in particular, there is an additional factor:

- **Data quality issues**
  The quality and completeness of our source of community service data - the **Community Services Data Set (CSDS)** - itself varies considerably. It may therefore be that having controlled for need and accounted for the role chance, some of the residual variation in supply is attributable to differences in completeness of the data across ICBs or population groups.

Appendix B: Further methodological details

Counts of contacts by ICB

Counts of community service contacts are the foundation for all our analysis in this project. To produce counts of community service contacts from CSDS data of variable quality, we made a number of design decisions and assumptions. We note these decisions and assumptions below.

Our procedure to estimate counts

Having reconciled our initial counts from the CSDS with NHSE (provider-based) figures, we:

1. Selected contacts in which patients were aged 65 and over.
2. Used the patient's Lower Super Output Area (LSOA) to assign them to an ICB. For records where this was missing, we used the commissioner code value and mapped this to ICB.
3. Performed an exploratory analysis to search for data anomalies.
4. Removed records with explicit "did not attend" (DNA) codes and those missing an *Attendance Status* value (the latter may be implicit DNAs). The total percentage of these non-attended contacts (likely to be planned contacts that did not take place), by ICB, can be seen in Figure 11.

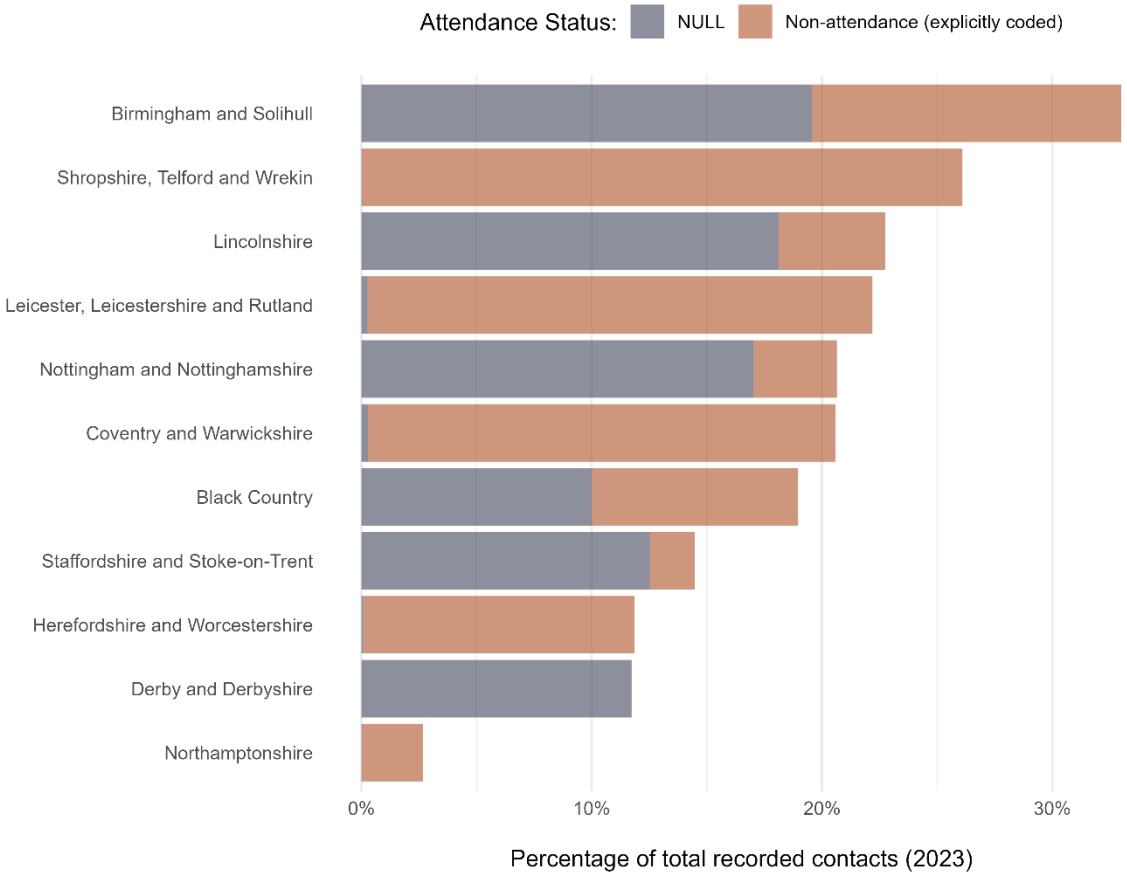


Figure 11. Percentage of non-attended contacts in each ICB in 2023

Sensitivity analysis for socio-economic and demographic variation

To assess whether our results from Section 2.2 of the main report were robust to data quality issues, we conducted two sensitivity analyses. These sensitivity analyses were deemed necessary because our preliminary analysis indicated that the attendance status and consultation medium fields (that contain information on whether the appointment was attended and whether it was delivered in person or remotely) are frequently incomplete. In the first, we repeated our analysis but used any community services contact after discharge as our outcome of interest (rather than face-to-face contacts only). In the second,

we followed a similar procedure but set the outcome variable to be any community service appointment (whether attended or not).

These analyses suggest that the reported results relating to equity of access by deprivation, ethnicity and sex were robust to data quality and coverage issues. We might therefore expect these results to persist even when improvements in data quality and coverage are delivered. Moreover, the reported results by deprivation, ethnicity and sex are likely to indicate real differences in the experience of these population subgroups.

The Panel regression analysis

Did changes in access to community services between 2018 and 2022 (inclusive) lead to changes in demand for urgent care services?

As the indirect (or direct) aim of many community services is to reduce unnecessary admissions, we chose all-cause emergency admission rates as our primary urgent care outcome. However, since we could not rule out reverse causality (i.e. that changes in admission rates might influence the provision of post-discharge community services), we examined several alternative urgent care outcomes (listed in Table 3). These alternative outcomes included emergency readmission rates and preventable (ACS) admission rates. Here, we might expect that many older people at risk of emergency readmission or ACS admission would already be in contact with community services (since community services should target those at risk such outcomes). As the community contact is, then, likely to precede the urgent care activity, the direction of causation is more likely to be as we have assumed.

It is true to say that the CSDS and SUS tables would support a patient-level regression model. Such a model might examine the influence of several explanatory variables on a patient's

outcome. But a patient-level model would not allow us to properly control for factors that differ from patient to patient and exert a strong influence on the outcome, and yet are factors we can't measure. One example is the level of informal care a person experiences.

We therefore chose to run a panel regression analysis. Panel regression is a population-level approach that will, by design, control for unmeasured factors that vary over time but that remain constant across geographical areas (for example, national policy). It will also control for unmeasured factors that vary by area but remain fairly constant over time (like healthcare seeking behaviour). This approach evidently requires us to have observations for a number of geographical areas over an extended period of time.

Due to the short history of the CSDS we would be looking at annual counts of (attended) contacts between 2018 to 2022. In terms of geographical areas, the CSDS is structured in such a way that we chose to examine areas based on the footprint of 2018 CCGs.

Few providers in any given region were able to submit consistently high-quality CSDS returns, month after month, between 2018 and the end of 2022. We therefore extended our coverage from regional to national. Using selection criteria (detailed in Table 4), we identified 38 areas across England (named in Table 5) that had generally high-quality data over the study period. These 38 areas covered about one-fifth of the England's over 65 population.

Area inclusion criteria (applied to monthly trends)
1. Less than 8 missing observations in the study period (of 60 observations). 2. No more than 3 consecutive missing or anomalous* observations between Apr 2018 and September 2022. 3. No more than one missing observation in the (initial pandemic) period between March 2020 and December 2020. 4. At least one observation of 5,000 contacts or more between January 2018 and June 2018. 5. Maximum value for the observations between January 2018 and June 2018 was at least 50% of the maximum value for the observations between June 2022 and December 2022.
* Anomalous observations Observations were considered anomalous if they were greater than 125% or less than 75% of the previous (valid) observation and did not fall in the period of March 2020 to December 2021. In the period March 2020 to December 2020, any observation less than 75% of the previous observations was treated as valid. In the year 2021, observations greater than 125% of the previous observation were treated as valid if they were consistent with valid observations in the period before March 2020.

Table 4: Area inclusion criteria.

Areas (2018 CCG footprints) included in the study	
Barking and Dagenham	
Bassetlaw	Oxfordshire
Berkshire West	Redbridge
Blackpool	Redditch and Bromsgrove
Cambridge and Peterborough	Richmond
Doncaster	Rushcliffe
East Leicestershire and Rutland	Shropshire
Fareham and Gosport	Somerset
Fylde and Wyre	South East Hampshire
Havering	South Sefton
Hounslow	South Worcestershire
Kernow	St Helens
Kingston	Stockport
Knowsley	Telford and Wrekin
Liverpool	Wakefield
Mansfield and Ashfield	Waltham Forest
Newark and Sherwood	West Hampshire
North Hampshire	West Leicestershire
Nottingham North and East	Wyre Forest
Nottingham West	

Table 5: Areas included in the panel regression model.

In a few cases, an observation in one of the chosen areas was missing or inexplicably low (or high) for the month (see anomalous observations in Table 4). In these cases, we imputed a count of contacts using robust STL decomposition. We ended up with a balanced panel data set that included measures of our six outcomes for 38 geographical areas over 5 years.

Model formulation

Since our outcomes were over-dispersed counts, we opted for a negative binomial regression model with mixed effects. We used the *R* package *lme4* which offered us greater flexibility than other options. Our model fixed effects were community service contact rate, year, proportion of the population (in an area) aged 75 or over, and the (area average) Income Deprivation Affecting Older People Index. We included area *itself* as a random effect. This allowed us to control for factors that vary, at random, across geographical areas, and should therefore have enabled us to better estimate the effect of community service provision on our urgent care outcomes. As an additional benefit, the values produced by this random effect can be thought of as sample values from a larger population of values. As our geographical areas were, in fact, a sample of all geographical areas, this approach suits our case well.

Our final model covariate was an offset variable equal to logarithm of the population aged over 65 to account for differences in populations by area and over time.

Appendix C: An evidence review

Does greater provision of community health services decrease urgent care use?

The vast majority of scientific literature examines the effect of a single, clearly defined intervention on one or more outcomes. However, "community services" is not a single, easily described intervention. This issue, along with several others, makes our titular question, above, a challenging one to answer.

Method

We ultimately chose to examine the evidence in terms of four intervention categories. Each type of intervention was deemed to be compatible with our definition of community services in Section 1.1 of the report. Our categories were:

i. **Transitional care (for older adults)**: These services manage an older person's care as they transition between hospital and home. The aim of transitional care is to lessen risks such as loss of function or re-hospitalisation. Transitional care activities might be considered a subset of intermediate care activities (Sezgin et al.,2020).

ii. **Hospital at Home:** These services provide patients with active, short-term treatment or monitoring services that would usually be available only in hospital. The aim of such programmes might be to reduce hospital admissions or facilitate early discharges.

iii. **Home-visit nursing:** In the UK, home-visit nursing is an aspect of community nursing. It may involve a range of activities, including health assessment, treatment, referral, and case management (Eltaybani et al., 2023). Home-visit nursing has long been seen as a way to prevent unnecessary admissions.

iv. **Case management** services can be led by nurses or MDTs who will plan, co-ordinate, and review an individual's care (Hutt et al., 2004).

These categories are not mutually exclusive. For example, transitional care interventions may include hospital at home, home-visit nursing, and case management elements. The exclusivity of these categories was, however, of limited concern to us given the overall purpose of the review.

We conducted searches in Medline, CINAHL, HMIC and Emcare during June 2023. To manage the volume of literature, we chose to limit our searches to *literature reviews* published in the last 10 years.

We performed our search using the following terms:

- Older adults
- Home visits (incl. Hospital at Home and Case Management)
- Emergency hospital use
- Reviews

As a result of this search, we identified a total of 483 reviews that matched our criteria. (This number included 109 duplicates.) After the screening process, we were left with 44 relevant reviews.

We decided that there were sufficient reviews in each category for us to select only those published in the last five years. We believed this would increase the likelihood that review findings could be applied to current health care contexts. We were therefore left with 18 reviews for our evidence scan (six reviews for transitional care and four reviews in each of the other categories).

For which outcomes were community service interventions found to be effective?

The effect of an intervention on hospital admission rates was reported in the vast majority of reviews.

Our review suggested that the following categories of intervention may be effective at reducing admissions and/or readmissions:

- transitional care interventions (Kast et al., 2021; Leithaus et al., 2022; Liebzeit et al., 2021; O'Donnell et al., 2020; Sempé et al., 2019; Weeks et al., 2018);
- hospital at home interventions (Arsenault-Lapierre et al., 2021; Dunn et al., 2020; Leong et al., 2021)
- home-visit nursing interventions (Eltaybani et al., 2023; Ergin et al., 2021; Sun et al., 2022)

However, the evidence base was limited and of mixed methodological quality.

Evidence that case management interventions reduced admissions was still less conclusive (Doménech-Briz et al., 2020; Poupard et al., 2020; Sadler et al., 2023; Yu et al., 2020). That said, case management likely plays a role in the other three intervention categories.

The evidence base examining the impact of community service interventions on other urgent care outcomes (specifically, length of stay in hospital and ED attendances), was, again, limited. However, several reviews found evidence that transitional care and hospital at home interventions facilitated hospital discharges and therefore shortened a patient's stay in hospital (Arsenault-Lapierre et al., 2021; Kast et al., 2021; Leong et al., 2021; O'Donnell et al., 2020). Hospital at home interventions may, nevertheless, increase the total period of treatment (the duration of stay in hospital plus duration of treatment at home) for patients (Arsenault-Lapierre et al., 2021; Leong et al., 2021).

Several more reviews found that transitional care and home-visit nursing interventions reduced ED attendances for older adults. (Leithaus et al., 2022; Osakwe et al., 2020; Sun et al., 2022).

What lessons can be learnt from the implementation of these interventions?

We summarize implementation lessons for 3 of the 4 categories.

Transitional care

Transitional care models that feature either pre-discharge or post-discharge (or both of there) elements may reduce hospital readmission and ED visits. The literature suggested that various factors might increase the success of transitional care models, including the utilisation of a small, tailored care team with a defined coordinator and shared decision making (between clinicians, and patients and their families) (Leithaus et al. 2022). Indeed, studies stressed that transitional care should consider the needs of those who will provide informal care for the patient. Informal carers are often the key to ensuring a swift and safe transition from hospital to home (Liebzeit et al., 2021; Leithaus et al., 2022).

There was some indication that transitional care models may be less appropriate for older adults with highly acute needs (O'Donnell et al.,2020; Weeks et al., 2018). Weeks et al. (2018) suggested a screening process may be helpful.

Hospital at Home

Similarly, the success of hospital at home interventions may depend on the stability of a patient's condition and their level of disability (Leong et al., 2021). Hospital at home interventions may prove to be more effective for patients with relatively stable conditions and/or mild-to-moderate levels of disability. Leong et al. (2021) also suggested that the distance from the patient's home to the hospital might, in some cases, provide a challenge.

There was some evidence to suggest that interventions with higher contact frequencies and those of longer duration were most effective at reducing hospital admissions (Dunn et al., 2020).

Case management

Yu et al. (2020) identified two factors that were central to high-quality case management. These were:

1. Ensuring continuity of the relationship. This allowed patients to feel comfortable enough to share sensitive information which may influence how they are cared for.
2. Actively involving older people in the planning of their care and/or the management of their condition or disease.

This same review also identified barriers to successful implementation, including a lack of clear information about case management and its goals, as well as concerns over privacy during home visits.

Doménech-Briz et al. (2020) suggested that the training offered by nurse case managers left patients and caregivers feeling empowered to manage the health condition.

Notes

1. Services may also be provided in community health centres, clinics, and schools.
2. For data from the Midlands region, in the calendar year 2022. Completeness may be lower in earlier years.
3. We chose this period for several reasons: (i) It is large enough to estimate differences in access to post discharge community services between groups with a high degree of precision, whilst also controlling for many factors; (ii) It takes advantage of the improvements that have taken place in the quality and coverage of the Community Services Data Set in recent years; (iii) It avoids the COVID-19 pandemic period, where access to health care was severely disrupted.
4. We excluded some patients from our analysis either because they were less relevant to the question at hand (e.g., patients who were discharged after one of a series of regular day or night attendances), patients with hospital stays of more than 60 days (to limit the period over which we need to search for community service contacts before admission), where critical data were missing (e.g. age, sex, LSOA, point of delivery or specialty) or from Dorset ICB where CSDS submissions are largely missing or incomplete.
5. Further case-mix adjustment may be possible, but it is likely that the key missing covariates, such as whether the patient lives alone, or the patient's health literacy level, are unobserved or unrecorded. The potential impact of these unobserved covariates on our results cannot be readily estimated.
6. Data from the CSDS suggests that, in 2022, approximately 15% of referrals to community services came from inpatient and outpatient services.
7. We investigated emergency *readmission* rates and preventable (ACS) admission rates. Here, we might expect that many older people at risk of emergency readmission or ACS admission would already be in contact with community services (since community services should target those at risk such outcomes). As the community contact is, then, likely to precede the urgent care activity, the direction of causation is more likely to be as we have assumed.

References

Arsenault-Lapierre et al. (2021). Hospital-at-Home Interventions vs In-Hospital Stay for Patients With Chronic Disease Who Present to the Emergency Department A Systematic Review and Meta-analysis. JAMA Network Open.

Baxter, S., Johnson, M., Chambers, D., Sutton, A., Goyder, E., & Booth, A. (2018). The effects of integrated care: a systematic review of UK and international evidence. *BMC health services research*, *18*(1), 1-13.

Bottery et al. (2023). Social care 360. The King's Fund. Available at: https://www.kingsfund.org.uk/publications/social-care-360

Cavallaro et al. (2023). Longer hospital stays and fewer admissions: How NHS hospital care changed in England between 2019 and 2022. The Health Foundation, Available at: https://www.health.org.uk/publications/long-reads/longer-hospital-stays-and-fewer-admissions

Crawford, R., Stoye, G., & Zaranko, B. (2018). The impact of cuts to social care spending on the use of Accident and Emergency departments in England (No. W18/15). IFS Working Papers.

Department of Health and Social Care (2023). The NHS Constitution for England. Available from: https://www.gov.uk/government/publications/the-nhs-constitution-for-england/the-nhs-constitution-for-england

Doménech-Briz et al. (2020). Results of Nurse Case Management in Primary Heath Care: Bibliographic Review. International Journal of Environmental Research and Public Health. 17 (24).

Eltaybani et al. (2023). Effectiveness of home visit nursing on improving mortality, hospitalization, institutionalization, satisfaction, and quality of life among older people: Umbrella review. Geriatric Nursing. 51.

Ergin et al et al. (2021). Effect of Home Visits by Nurses on the Physical and Psychosocial Health of Older Adults: A Systematic Review and Meta-Analysis. Iranian Journal of Public Health. 51 (4).

Gerrish, K. (1999). Inequalities in service provision: an examination of institutional influences on the provision of district nursing care to minority ethnic communities. Journal of advanced Nursing, 30(6), 1263-1271.

Gulliford, M., Figueroa-Munoz, J., Morgan, M., Hughes, D., Gibson, B., Beech, R., & Hudson, M. (2002). What does' access to health care 'mean?. *Journal of health services research & policy*, *7*(3), 186-188.

Huntington-Klein, N. (2021). *The effect: An introduction to research design and causality*. CRC Press.

Hutt, R., Rosen, R., & McCauley, J. (2004). Case managing long term conditions. *What impact does it have in the treatment of older people*, 1-28.

Kamau-Small, S., Joyce, B., Bermingham, N., Roberts, J., & Robbins, C. (2015). The impact of the care equity project with community/public health nursing students. *Public Health Nursing*, *32*(2), 169-176.

Kast et al. (2021). Economic evidence with respect to cost-effectiveness of the transitional care model among geriatric patients discharged from hospital to home: a systematic review. The European Journal of Health Economics. 22 (6).

Leithaus et al. (2022). Integrated Care Components in Transitional Care Models from Hospital to Home for Frail Older Adults: A Systematic Review. International Journal of Integrated Care. 22 (2).

Leong et al. (2021). Comparison of Hospital-at-Home models: a systematic review of reviews. BMJ Open. 11 (1).

Liebzeit et al. (2021). A scoping review of interventions for older adults transitioning from hospital to home. Journal of the American Geriatrics Society. 69 (10).

Liu, D., Pace, M. L., Goddard, M., Jacobs, R., Wittenberg, R., & Mason, A. (2021). Investigating the relationship between social care supply and healthcare utilization by older people in England. Health economics, 30(1), 36-54.

Lyu, J. Y., Hu, B., Wittenberg, R., & King, D. (2023). The relationships between informal and formal social care for older people in England: A comparison before and after the Care Act 2014. Journal of Aging & Social Policy, 1-18.

National Institute for Health and Care Research (2022). Understanding the role of adult community health services in avoiding hospital admissions. Available at https://www.fundingawards.nihr.ac.uk/award/NIHR134436

NHS Digital (2023a). Community Services Statistics, July 2023. Available from: https://digital.nhs.uk/data-and-information/publications/statistical/community-services-statistics-for-children-young-people-and-adults/july-2023

NHS Digital (2023b). Implementing the CSDS v1.6 tools and guidance. Available from: https://digital.nhs.uk/data-and-information/data-collections-and-data-sets/data-sets/community-services-data-set/implementing-the-community-services-data-set-csds-v1.6-tools-and-guidance

NHS Digital (2023c). The data you need to send. Available from: https://digital.nhs.uk/data-and-information/data-collections-and-data-sets/data-sets/community-services-data-set/guidance/the-data-you-need-to-send

NHS England (2014.) NHS Five Year Forward View. Available from: https://www.england.nhs.uk/five-year-forward-view/

NHS England (2019). NHS Long Term Plan. Available from: https://www.longtermplan.nhs.uk/

O'Donnell et al. (2020). The Effectiveness of Transition Interventions to Support Older Patients From Hospital to Home: A Systematic Scoping Review. Journal of Applied Gerontology. 40 (11).

Office of National Statistics (2023). Unpaid care, England and Wales: Census 2021. Available at: https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthandwellbeing/bulletins/unpaidcareenglandandwales/census2021

Osakwe et al. (2022). The outcomes of nurse practitioner (NP)-Provided home visits: A systematic review. Geriatric Nursing. 41 (6).

Pauly, B. M., MacKinnon, K., & Varcoe, C. (2009). Revisiting "who gets care?": Health equity as an arena for nursing action. Advances in nursing Science, 32(2), 118-127.

Poupard et al. (2020). Community-based case management does not reduce hospital admissions for older people: a systematic review and meta-analysis. Australian Health Review. 44 (1).

Reutter, L., & Kushner, K. E. (2010). 'Health equity through action on the social determinants of health': taking up the challenge in nursing. *Nursing inquiry*, *17*(3), 269-280.

Sadler et al. (2023). Case management for integrated care of older people with frailty in community settings. Cochrane Database of Systematic Reviews.

Scobie S and Kumpunen S (2023) The state of community health services in England. Nuffield Trust. Available from: https://www.nuffieldtrust.org.uk/resource/the-state-of-community-health-services-in-england

Seamer, P., Brake, S., Moore, P., Mohammed, M. A., & Wyatt, S. (2019). Did government spending cuts to social care for older people lead to an increase in emergency hospital admissions? An ecological study, England 2005–2016. BMJ open, 9(4), e024577.

Sempé et al. (2019). Multidisciplinary interventions for reducing the avoidable displacement from home of frail older people: a systematic review. BMJ Open. 9 (11).

Sezgin, D., O'Caoimh, R., O'Donovan, M. R., Salem, M. A., Kennelly, S., Samaniego, L. L., ... & European Union Advantage Joint Action Work Package 7 partners in collaboration with the International Foundation for Integrated Care Special Interest Group on Intermediate Care. (2020). Defining the characteristics of intermediate care models including transitional care: an international Delphi study. *Aging clinical and experimental research*, *32*, 2399-2410.

Stevens, A., Raftery, J., Mant, J., & Simpson, S. (2004). *Health Care Needs Assessment: The Epidemiologically Based Needs Assessment Reviews* (Vol. 1). Radcliffe Publishing.

Steventon, A., Bardsley, M., Billings, J., Georghiou, T., & Lewis, G. (2011). An evaluation of the impact of community-based interventions on hospital use. London: Nuffield Trust, 54-54.

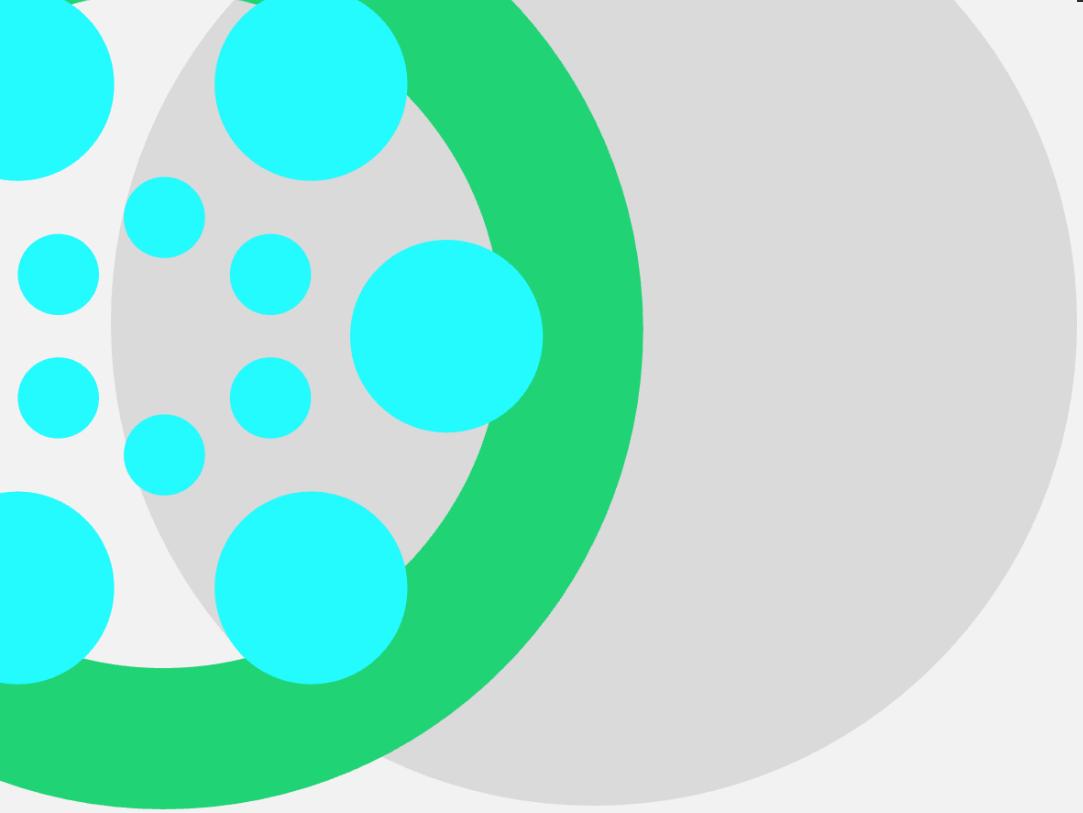
Sun et al. (2022). Home-based primary care visits by nurse practitioners: A systematic review. Journal of the American Association of Nurse Practitioners. 34 (6).

Wakefield, M., Williams, D. R., & Le Menestrel, S. (2021). The future of nursing 2020-2030: Charting a path to achieve health equity. National Academy of Sciences.

Walshe, C., Todd, C., Caress, A., & Chew-Graham, C. (2009). Patterns of access to community palliative care services: a literature review. Journal of pain and symptom management, 37(5), 884-912.

Weeks et al. (2018). The impact of transitional care programs on health services utilization in community-dwelling older adults: a systematic review. Joanna Briggs Institute Database of Systematic Reviews & Implementation Reports. 16 (2).

Yu et al. (2020). Case Management Models and Continuing Care: A Literature Review across nations, settings, approaches, and assessments. Home Health Care Management & Practice. 33 (2).



Midlands Decision Support Network

Web: www.midlandsdecisionsupport.nhs.uk

The Strategy Unit.

Midlands Decision Support Network