Using FOI data to assess the state of Health Visiting Services in England before and during COVID-19

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Abstract

Background: The first 1001 Days have been recognised as a critical window of opportunity and recent policy developments (e.g. Early Years Healthy Development Review) have identified the Healthy Child Programme (HCP) as central for achieving this. Health Visitors (nurses or midwives who have received further training as Specialist Community Public Health Nurses) are responsible for leading the HCP. However, there is substantial variation in the delivery of Health Visiting services across the country. Additionally, the COVID-19 pandemic has caused further disruption, with many health visitors redeployed from their current roles to the frontline. However, the exact state of the Health Visiting services before and after the pandemic is not precisely known. Our aim is to evaluate the state of health visiting services prior to COVID-19 and the exact scale and variation in redeployment of health visiting staff during the first COVID-19 wave.

Methods: Primary data collection via Freedom-of-Information (FOI) requests in 151 Upper-Tier Local Authorities (UTLA) in England. Primary outcomes are the number of full-time equivalent (FTE) health visiting staff employed in health visiting teams on 1 February 2020, and the maximum number of FTE health visiting staff who were redeployed during the first COVID-19 wave. We show graphical visualizations of the state of the health visiting workforce in England via maps, and we study the determinants of workforce size, composition, caseload, and redeployment via regression analysis. We also provide an analysis of job postings for health visiting roles collected on the 'DWP - Find a Job' website.

Findings: Health visiting was under severe strain before the COVID-19 pandemic. The mean caseload was 409 children per full-time equivalent (FTE) caseload holding health visiting staff

on 1 February 2020, higher than the recommended maximum of 250 children per FTE health visitor. During the first COVID-19 wave, health visiting staff were redeployed out of their roles supporting young children and families. 66% of local authorities redeployed at least one FTE member of staff in health visiting teams. Redeployment of health visitors ranged from 0% to 63%, and of clinical skill mix staff supporting health visitors from 0% to 100%. Health visiting staff were redeployed from 19 March 2020, as England went into its first national lockdown, for an average duration of over 2 months. Redeployment was still in place until September 2020, and in 73% of local authorities that redeployed staff, it continued past June 3 2020 (the date of the supposed restoration of health visiting services by NHS England). There was also a large decline in job postings for health visiting roles at the start of the pandemic, suggesting that the posts lost due to redeployment were not replaced.

Interpretation: The findings show extensive and unequal redeployment of health visiting staff during the first COVID-19 wave across English local authorities. This happened on top of a state of high pressures on health visiting teams prior to the pandemic, with staff responsible for worryingly high caseloads. This situation threatens the universality of the Healthy Child Programme, and calls for appropriate policy responses to avoid the possible worsening of inequalities in maternal well-being and child health and development.

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1. Introduction

The early years of life are a crucial period for a child's development, and policy interventions at this stage can have significant impacts throughout the life cycle. Home visiting programmes can provide invaluable support to children and families, with the aim to prevent and reduce inequalities in early development (1, 2, 3). Evaluations of home visitation programmes have shown that well-designed programmes can lead to short and long-term benefits for the child and mother (4, 5, 6, 7, 8).

In England, health visiting is a home visiting programme for all new parents and children under five. Health visitors are trained and registered nurses or midwives who have completed additional specialist training in community public health nursing. The additional training prepares nurses for a career working to reduce health inequalities, promote health and prevent ill health in the home and community setting. Health visiting staff deliver the 0-5 element of the Healthy Child Programme (HCP), England's early intervention and prevention public health programme. The HCP aims to support parents in caring and nurturing their child, help parent-child bonding, protect children from disease, reduce childhood obesity, identify physical and mental health issues early, and ensure school-readiness (9). Health visitors deliver five mandated contacts with new families: the first before the child's birth, then at 10-14 days, then at 3-5 weeks, 6-8 weeks, 9 months to 1 year, and 2 years to 2.5 years. At these contacts they assess the child's growth and development, provide antenatal and postnatal support to the mother, provide information on breastfeeding and nutrition, encourage healthy behaviours, and identify vulnerable or at-risk children. Health visitors are also key in identifying and supporting mothers with postnatal depression, and additional training in identifying and treating postnatal depression has been shown to lead to reductions in depressive symptoms in mothers (10).

Health visiting teams are made up of a variety of roles, with community nursery nurses, community staff nurses, student health visitors and other clinical skill mix staff supporting health visitors in the delivery of the 0-5 HCP. This configuration of health visiting teams

developed following the updated HCP guidance in 2009[1], which emphasised the use of integrated services to deliver the HCP, made up of a range of health professionals and practitioners (11).

In recent years, public health in England has faced substantial funding cuts (12). Between 2015/16 and 2020/21, the source of funding for health visiting, the public health grant to local authorities, was 22% lower per head in real terms (13). During this time period, between November 2015-2020, the number of health visitors working in the NHS fell by 35% from 10,279 to 6,672. (14), a trend mirrored across the NHS nursing workforce despite a rise in the demand for services (15). Given this worrying decline, prior to the pandemic, concerns were raised about the state of health visiting services and families' ability to access support of health visiting staff (16, 17).

On 17 March 2020, just before the first COVID-19 lockdown was introduced in England, NHS England and NHS Improvement published a letter detailing measures to transfer staff and resources towards the COVID-19 response. In this letter, registered nurses in non-patient facing roles were called to support direct clinical practice in the NHS. Health visitors, as registered nurses, and nurses working in health visiting teams were to be redeployed out of their roles. On 19 March 2020, further NHS England guidance set out a COVID-19 prioritisation plan within community health services. The guidance ordered a partial stop to pre-birth and 0-5 services - including health visiting services. All services were to stop except for antenatal contact (virtual) and new birth visits (face-to-face or virtual). Other contacts were to be assessed and stratified for vulnerable or clinical need (e.g., maternal mental health, safeguarding work, interventions for identified vulnerable families). Under the COVID-19 prioritisation, there was a pause to three of the five mandated Healthy Child Programme contacts (6-8 week assessment, 1 year assessment, 2-2.5 year review) for families who were not identified as vulnerable or in clinical need. Guidance on the restoration of community health services was published on 3 June, with advice to continue the antenatal contact and new birth visit and reinstate the 6-8 week review. Again, other contacts were to be assessed and stratified for vulnerable or clinical need and face-to-face contacts were to be prioritised for families unknown to services. There was no mention of the 1 year assessment and 2-2.5 year review.

The aim of this study is to assess the state of health visiting services prior to the pandemic and document the exact scale and variation in the redeployment experienced by health visiting staff during the first wave of COVID-19 (19 March to 1 September 2020).

2. Methods

Study design

This study is based on data collected by the researchers through Freedom of Information (FOI) requests to the providers of health visiting services across all Upper-Tier Local Authorities (UTLA) (n=151) in England. Of these, 32 UTLAs are London Boroughs. The first FOI requests were submitted on 19-20 August 2020, and the remaining between 2-7 September. Responses were received between 27 August 2020 and 26 January 2021.

Since 01 October 2015[2], health visiting services have been commissioned by local authorities. This has resulted in a mixed service provision across NHS Trusts, private providers, and local

[1] Update of Standard One (incorporating Standard Two) of the National Service Framework for Children, Young People and Maternity Services, 2004, Department of Health and Social Care.
[2] The Local Authorities (Public Health Functions and Entry to Premises by Local Healthwatch Representatives) and Local Authority (Public Health, Health and Wellbeing Boards and Health Scrutiny) (Amendment) Regulations 2015.

councils themselves. A complete dataset containing the number of health visiting staff across all local authorities is not publicly available[3], nor accessible through a central body such as NHS England or Public Health England, which is why we collected the data through FOIs for individual local authorities. Private organisations are not subject to the FOI act, so can refuse our requests. We have received responses for 144 local authorities. For the remaining 7 local authorities, the providers have either refused our request or not responded. Of these 144 local authorities, not all have submitted complete data on health visiting staff numbers, caseload, and redeployment, as reflected in some reduced sample sizes reported in this paper. We have received complete data on FTE staff numbers and redeployment of staff for 140 local authorities (93%).

As a complement to our analysis, we use data on daily health visiting job postings on NHS Jobs collected through FOI. In addition, health visiting job postings on 'DWP - Find a Job' were collected by the research team from 27 November 2020 to 18 March 2021. The combined data relates to job postings between 1 March 2019 and 31 March 2021.

Ethical approval was not required for the collection of FOI data.

Variables

We asked providers for both the number of full-time equivalent (FTE)[4] health visitors and the number of FTE clinical skill mix staff (not defined as health visitors) who were employed in their health visiting teams for a certain local authority, both in total and those who were responsible for caseloads of families on 1 February 2020. We also requested the number of children under 5 in a certain local authority that the health visiting teams were responsible for. These variables combined allow us to estimate the average caseload per FTE in each local authority on 1 February 2020.

We then asked providers for both the maximum number of FTE health visitors and the maximum number of FTE clinical skill mix staff working in health visiting teams (not defined as health visitors) who have been/were redeployed due to COVID-19 to date. We also asked providers to specify the start and end dates of redeployment: as redeployment occurred in waves in some local authorities, these dates represent the date at which the first health visiting team member was redeployed and the date at which the last redeployed staff member returned to her post. We set a cut-off date of September 1 to consider redeployment for the first COVID-19 wave. We estimate duration of any redeployment of health visiting staff by calculating the time between the start and end dates of redeployment; duration is set to zero where redeployment did not occur. We note that redeployment of staff may not have been continuous throughout March to September; staff returning and leaving, however, can still be viewed as disruptions to the health visiting service.

For health visiting job postings, the total number of daily health visiting job postings is used.

[3] The numbers of health visitors working in the NHS and independent providers are available in the NHS Workforce Statistics and Independent Healthcare Provider Workforce Statistics respectively, but the number of other clinical skill mix staff working in health visiting teams is not specified. We compare the number of FTE health visitors by provider in our data (as of 1 February 2020) and the NHS Workforce Statistics for 31 January 2020. For the 60 providers for which we have full data, the mean difference is negligible: 0.50 FTE, with the median -0.85 FTE. For 5 providers, instead, there is an absolute difference greater than 30 FTE, which could be due to various reasons, such as staff absence (as suggested in communications with the providers themselves). We also compare the number of FTE health visitors by provider in our data (again, as of 1 February 2020) and the Independent Healthcare Provider Workforce Statistics for 30 September 2019, the closest date available. For the 7 providers with full data, the mean difference is small: -4.9 FTE, with the median -1.46 FTE; of these 7 providers, 5 have an absolute difference of less than 2 FTE health visitors.

[4] Note that one FTE is not necessarily equivalent to one employee, as staff can work part-time. This means that two individuals working 0.5 FTE is the same as 1 FTE in our data.

Data analysis/Statistical analysis

We investigate the state of health visiting services before the COVID-19 pandemic through descriptive analyses of data on the number of health visitors and other clinical skill mix staff working in health visiting teams, caseload holders and caseload size. We compute the caseload size by dividing the total number of children under five that a health visiting team is responsible for by the total number of FTE caseload holding staff. We present a table of summary statistics to show the distribution of health visiting staff by pay band across English UTLAs on 1 February 2020. As local authorities are responsible for the commissioning of health visiting services, we examine our data at the local authority level. We visually display caseload data in map form to highlight the geographical variation in caseload size.

We then examine trends in redeployment of staff working in health visiting teams, the dates when redeployment started and ended in a local authority, and duration of redeployment for the first COVID-19 wave. We investigate geographical patterns in redeployment of health visitors and clinical skill mix staff through the use of maps.

We use OLS regressions to examine the predictors of key outcomes of interest: the total number of FTE health visitors, the total number of FTE clinical skill mix staff, caseload size, the percent of FTE health visiting staff who are health visitors, the percent of clinical skill mix staff with caseload, an indicator variable for whether any redeployment occurred, and the percent of FTE health visiting staff who were redeployed.

We calculate the 14-day moving average in daily health visiting job postings and present the time trend in postings between 1 March 2019 and 31 March 2021 in a graph.

3. Results

The state of health visiting services before the COVID-19 pandemic

Prior to COVID-19 (on 1 February 2020), the average number of FTE health visitors in a local authority was 58.2, and the average number of other clinical skill mix staff (e.g. nursery nurses, community staff nurses) working in health visiting teams was 27.0. There was significant variation, with the number of FTE health visitors ranging from 10.9 to 190.9. On average, health visiting teams were predominantly composed of band 6 health visitors, the minimum grade for qualified health visitors in England[5] (see Table 1); 89% (126/142) and 49% (70/142) of local authorities also employed band 7 and band 8 health visitors, respectively.

Only 1% (2/142) of local authorities did not employ clinical skill mix staff in their health visiting teams. For the rest, band 4 clinical skill mix staff were the most common grade, with 94% (134/142) of local authorities employing these staff. 71% (101/142) of local authorities also employed band 5 clinical skill mix staff. Clinical skill mix staff of higher pay bands were more infrequent. 37% (52/142) of local authorities employed band 7 clinical skill mix staff and 18% (25/142) employed band 8 clinical skill mix staff.

Health visitors made up, on average, 70% of health visiting teams on 1 February 2020. The percent of health visitors out of all FTE staff working in health visiting teams ranged from 33% (18.6/57.2) to 100% in two local authorities (28.8/28.8, 39.3/39.3). The Institute of Health Visiting (iHV) notes the value of clinical skill mix staff in delivering appropriate support to each family but highlights the fact that health visitors have specialist training, so should not be substituted by clinical skill mix staff (18, 19).

[5] In Scotland, the minimum grade for qualified health visitors is band 7, following an uprating in 2018.

Table 1: Distribution of health visiting staff across English UTLAs on 1st February 2020

	Mean	Std. Dev.	Min	Max
Total no. of FTE health visitors	58.2	37.8	10.9	190.9
Total no. of FTE other clinical staff	27.0	26.3	0.0	147.1
No. of FTE band 6 health visitors	48.0	32.5	9.1	161.4
No. of FTE band 7 health visitors	8.9	9.0	0.0	50.1
No. of FTE band 8 health visitors	1.0	1.5	0.0	7.2
No. of FTE band 2 clinical staff	0.1	1.2	0.0	14.3
No. of FTE band 3 clinical staff	0.8	3.4	0.0	26.4
No. of FTE band 4 clinical staff	16.2	13.5	0.0	79.8
No. of FTE band 5 clinical staff	5.9	8.8	0.0	41.9
No. of FTE band 6 clinical staff	1.6	5.9	0.0	57.0
No. of FTE band 7 clinical staff	1.9	9.7	0.0	112.5
No. of FTE band 8 clinical staff	0.3	0.7	0.0	4.0
Observations	142			

Note: FTE staff numbers include both caseload and non-caseload holders. Std. Dev. = standard deviation. Min. = minimum. Max. = maximum. UTLA = Upper-Tier Local Authority.

Health visiting staff also differed in terms of caseload. Health visitors were responsible for caseloads of families with children under 5 in all local authorities, and clinical skill mix staff also held caseload in 42% (60/142) of them. The 2015 legislation[6] states that other clinical skill mix staff are permitted to provide the HCP contacts if the individual is under supervision of the health visitor, or if the health visitor acts as accountable for delegation of reviews. The legislation, therefore, leaves room for clinical skill mix staff to hold caseload, although we do not know to what extent health visitor supervision occurs in these cases.

On average, 89% of all caseload holders in a local authority were health visitors, with clinical skill mix staff working in health visiting teams making up the remainder. The minimum percentage of health visitor caseload holders among all caseload holding staff was 36% (81.0/228.1), but the distribution is highly skewed to caseload holders being solely health visitors. Within a local authority, on average, 90% of health visitors held caseload, with a minimum of 63% (18.7/29.8) and a maximum of 100% in 31 local authorities (e.g. 11.3/11.3, 54.3/54.3, 191.0/191.0). A lower proportion of clinical skill mix staff held caseload, 27% on average, and ranging from 0% and 100% in 21 UTLAs (e.g. 0.6/0.6, 20/20, 147.1 /147.1).

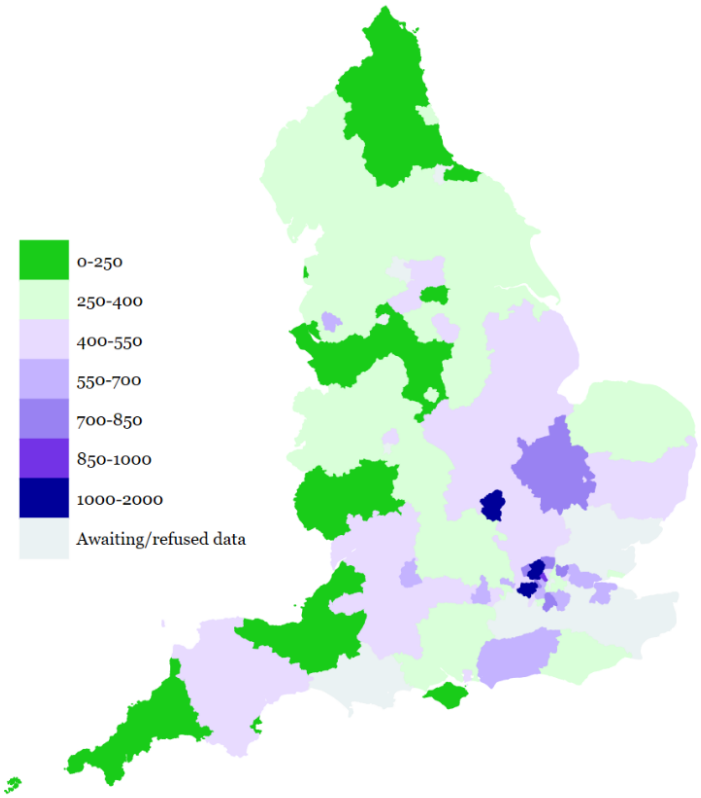
Across local authorities, the mean caseload on 1 February 2020 was 409 children per FTE staff, and the median 349. The maximum caseload size was 1,515 per FTE. In 79% (110/138) of local authorities, caseloads were greater than 250 children per FTE staff (the maximum recommended by the IHV[7]); in 66% of them (91/138), caseloads were greater than 300 children per staff; in 21% (29/138), caseloads were greater than 500 children per staff; and in 9% (12/138), caseloads were greater than 700 children per staff. Caseload size by English UTLA including London boroughs is shown in figures 1 and 2. The figures show that caseload size varied substantially across local authority boundaries, with families in neighbouring

[6] The Local Authorities (Public Health Functions and Entry to Premises by Local Healthwatch Representatives) and Local Authority (Public Health, Health and Wellbeing Boards and Health Scrutiny) (Amendment) Regulations 2015.

[7] Note the 250 caseload figure recommended by IHV refers to health visitors only; here, we use it in reference to all caseload holding staff in health visiting teams (i.e. including both health visitors and skills mix).

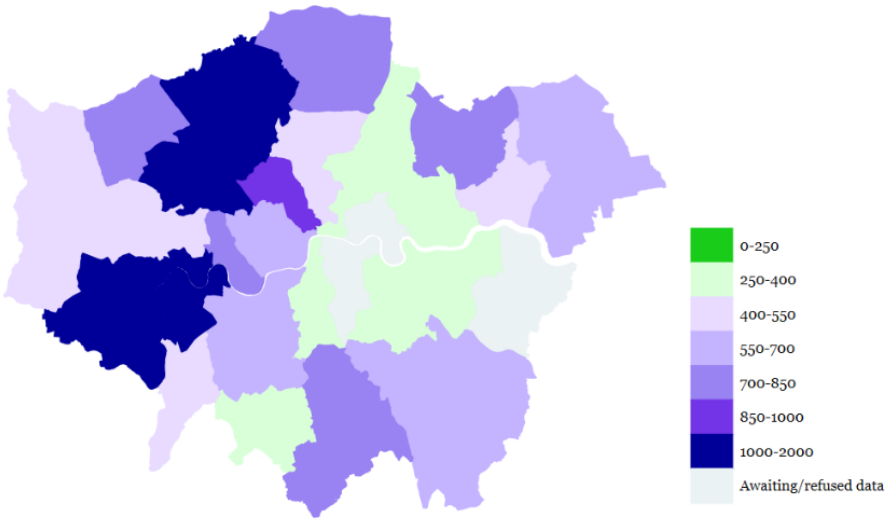
UTLAs likely experiencing different levels of health visiting provision.

Figure 1: Caseload size on 1 February 2020, by Upper-Tier Local Authority in England



Note: N=138. Caseload is no. of children <5 divided by no. of FTE caseload holding health visiting staff.

Figure 2: Caseload size on 1 February 2020, by London Borough



Note: N=30. Caseload is no. of children <5 divided by no. of FTE caseload holding health visiting staff.

Table 2: Predictors of pre-pandemic indicators of the state of health visiting on 1 February 2020

	(1)	(2)	(3)	(4)	(5)
	Total no. of FTE health visitors	Total no. of FTE clinical skill mix staff	Caseload	% of FTE staff who are health visitors	% of clinical skill mix staff with caseload
Deprivation dummies					
- High deprivation (ref. low)	-12.957**	-11.178*	-80.546	2.452	-17.195*
	(4.511)	(4.533)	(41.454)	(2.663)	(7.404)
% of children looked after	0.512***	0.282***	-0.459*	-0.016	0.072
	(0.048)	(0.038)	(0.214)	(0.018)	(0.057)
% of children referred to services but under threshold	0.429	0.272	-5.020*	0.038	0.519
	(0.270)	(0.299)	(1.941)	(0.141)	(0.457)
% of child hospital admissions for injuries	-0.048	-0.059	-1.454***	0.048*	-0.042
	(0.040)	(0.038)	(0.341)	(0.024)	(0.079)
% of population aged 0-4	-0.126	2.314	86.124***	-2.910*	-1.881
	(2.23)	(1.803)	(21.591)	(1.378)	(3.499)
Provider type (ref. council)					
- Provider is NHS Trust	-7.258	-17.730	102.978**	3.254	-0.370
	(7.132)	(10.284)	(36.930)	(4.689)	(10.303)
- Provider is private	-10.331	-14.492	86.032	1.482	-2.763
	(8.185)	(10.946)	(74.683)	(4.973)	(13.497)
Observations	125	125	125	125	125
R-squared	0.637	0.397	0.377	0.095	0.076

Note: Table presents results from models estimated via Ordinary Least Square. Where the dependent variable is a percent (columns 4 and 5), models that better fit the dependent variable were tested and yielded similar results. The outcome variables are: 1) the number of FTE health visitors employed in the Upper-Tier Local Authority (UTLA) on 1st February 2020, 2) the number of FTE clinical skill mix staff working in health visiting teams employed in the Upper-Tier Local Authority (UTLA) on 1st February 2020, 3) the total number of children under five that the health visiting teams were responsible for divided by the total number of FTE caseload holding health visiting staff in the Upper-Tier Local Authority (UTLA) on 1st February 2020, 4) the percent of FTE health visiting staff (both health visitors and clinical skill mix staff) who were health visitors in the Upper-Tier Local Authority (UTLA) on 1st February 2020, and 5) the percent of FTE clinical skill mix staff who were caseload holders in the Upper-Tier Local Authority (UTLA) on 1st February 2020. 'Deprivation dummies' are for the rank of the index of multiple deprivation for 2019. Lower ranks indicate more disadvantaged UTLAs. High deprivation indicates UTLAs below the median rank. Low deprivation indicates UTLAs above the median rank. Source: ONS. 'Provider type' is the type of provider in February 2020. Source: Freedom of Information requests. '% of children looked after' is the number of children looked after per thousand children aged 0-4 in the UTLA for 2019, multiplied by 100. Source: Department for Education (DfE). % of children referred to services but under threshold' is the number of children per thousand aged 0-4 referred to children's services but not meeting thresholds in the UTLA for 2019, multiplied by 100. Source: Children's Commissioner/DfE. '% of child hospital admissions' is the number of child hospital admissions caused by unintentional and deliberate injuries per thousand children aged 0-4 in the UTLA for 2018/19, multiplied by 100. Source: Children's Commissioner. '% of population aged 0-4' is the number of children aged 0-4 as a fraction of all persons in the UTLA for mid-2019, multiplied by 100. Source: ONS. Robust standard errors are shown in parentheses. Sample size restricted to local authorities with complete data across all variables to enable comparison.

* p<0.05, ** p<0.01, *** p<0.001

Table 2 shows results of OLS regressions of five dependent variables that describe the state of health visiting prior to the pandemic on indicators of potential demand and need, demographics and deprivation, and provider type. The rate of Children Looked After in the local authority is significantly positively associated with the number of FTE health visitors and FTE clinical skill mix staff, and significantly negatively associated with caseload size (columns 1-3). The rate of children referred to services but under threshold in the local authority is significantly positively associated with the number of FTE health visitors, and significantly negatively associated with caseload size (columns 1 and 3). Local authorities where there is a

greater rate of child hospital admissions for injuries are associated with reduced caseload sizes too, while those with higher share of population 0-4 and where the provider of health visiting services is a NHS trust have higher caseloads (column 3). No predictor is significantly associated with the percentage of FTE staff who are health visitors (column 4). In high deprivation areas, there is a reduced percentage of clinical skill mix staff holding caseload (column 5).

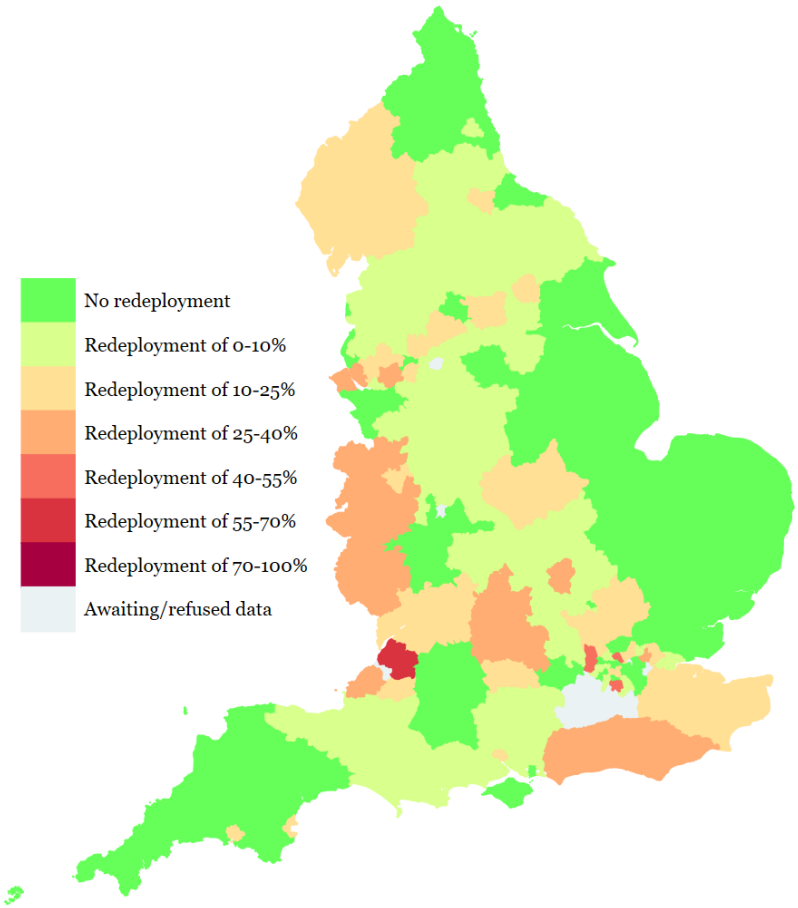
Redeployment of staff working in health visiting teams during the first COVID-19 wave

Many local authorities did not redeploy staff, but 66% of them (93/140) redeployed at least one FTE member of staff in health visiting teams. 52% (75/144) of local authorities redeployed at least one FTE health visitor, and 55% (77/140) of them redeployed at least one FTE clinical skill mix staff member.

Across local authorities, redeployment of health visitors ranged from 0% to 63% (25/39.8) of FTE staff in post on 1 February 2020, with 11% (16/144) of local authorities redeploying over 25% of them. Figures 3 and 4 display the percent of health visitors redeployed across local authorities. Redeployment of FTE clinical skill mix staff in health visiting teams ranged from 0% to 100% in one local authority (18/18), with 12% (17/140) of local authorities redeploying over 50% of them. Figures 5 and 6 show the percent of clinical skill mix staff redeployed across local authorities.

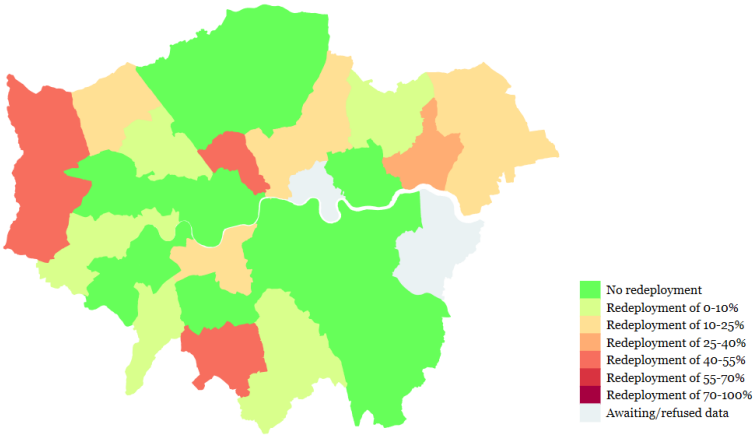
Combining redeployment of health visitors and clinical skill mix staff, we find that redeployment of total FTE health visiting staff reached a maximum of 63% (37/58.6). The percent of health visitors and of clinical skill mix staff redeployed are significantly positively correlated (0.516) at the 5% significance level.

Figure 3: Percent of health visitors redeployed up to 1 September 2020 due to COVID-19, by Upper-Tier Local Authority in England



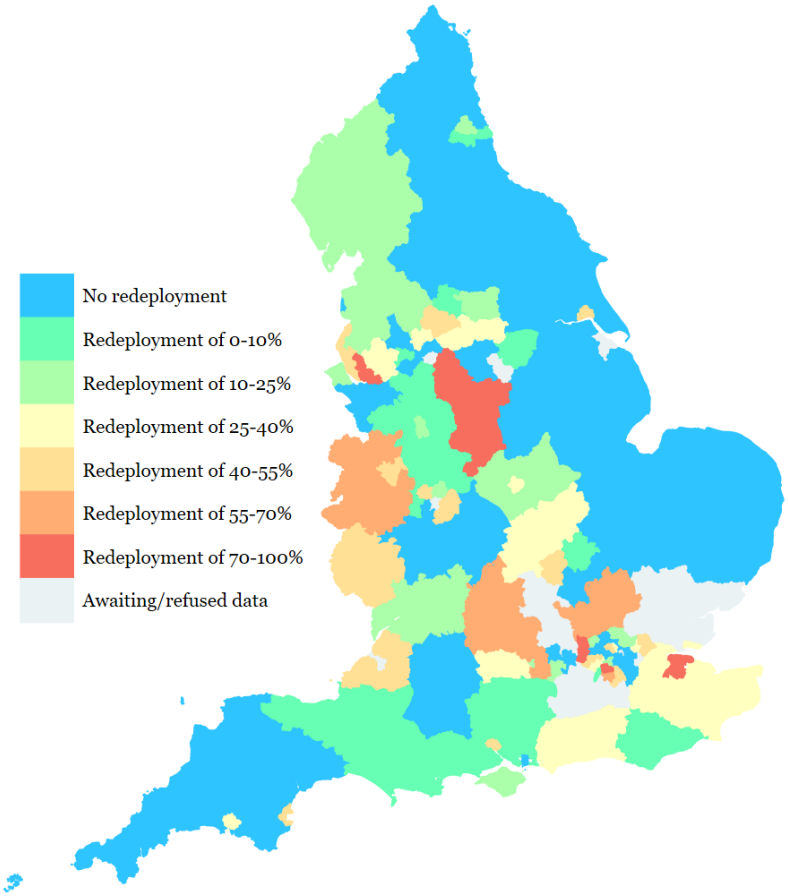
N=144.

Figure 4: Percent of health visitors redeployed up to 1 September 2020 due to COVID-19, by London Borough



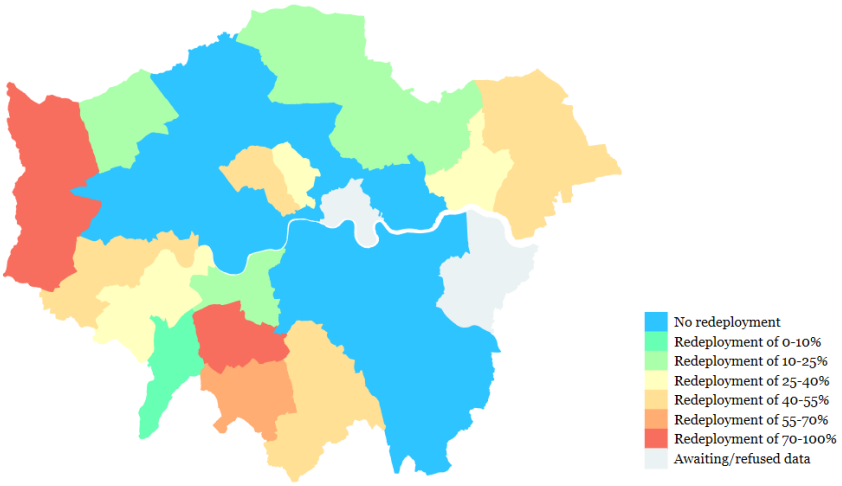
N=31.

Figure 5: Percent of clinical skill mix staff working in health visiting teams redeployed up to 1 September 2020 due to COVID-19, by Upper-Tier Local Authority in England



N=140

Figure 6: Percent of clinical skill mix staff working in health visiting teams redeployed up to 1 September 2020 due to COVID-19, by London Borough



N=31.

Health visiting staff were redeployed from 19 March 2020, as soon as NHS guidance was issued. The average duration of redeployment up to 1 September was 65.7 days (2.2 months). In 95% (91/96) of local authorities that redeployed staff, redeployment started before May. Despite the supposed restoration of health visiting services issued on 3 June 2020, redeployment of staff was still in place well past this date and up to 1 September: indeed, in 73% (68/93) of local authorities that redeployed staff, redeployment was ongoing beyond 3 June.

Table 3 shows OLS regressions where the dependent variable is a binary indicator for whether redeployment occurred in a local authority (column 1) and the percent of health visiting staff redeployed (column 2). Only two variables are significant predictors of redeployment. Areas of high deprivation are associated with a reduced percent of health visiting staff redeployed. The provider type is also found to be a significant predictor: health visiting staff working in NHS Trusts and private providers were more likely to be redeployed relative to their counterparts working in councils.

Health visiting job postings

As a complement to our analysis, we consider job postings for health visiting roles. There was a large decline in job postings for health visiting roles at the start of the pandemic (Figure 7), suggesting that health visiting teams were not bringing on new workforce despite the redeployment of health visiting staff. Since the first COVID-19 wave, there has been some recovery in daily postings but there was a second dip during the COVID-19 spike in January 2021.

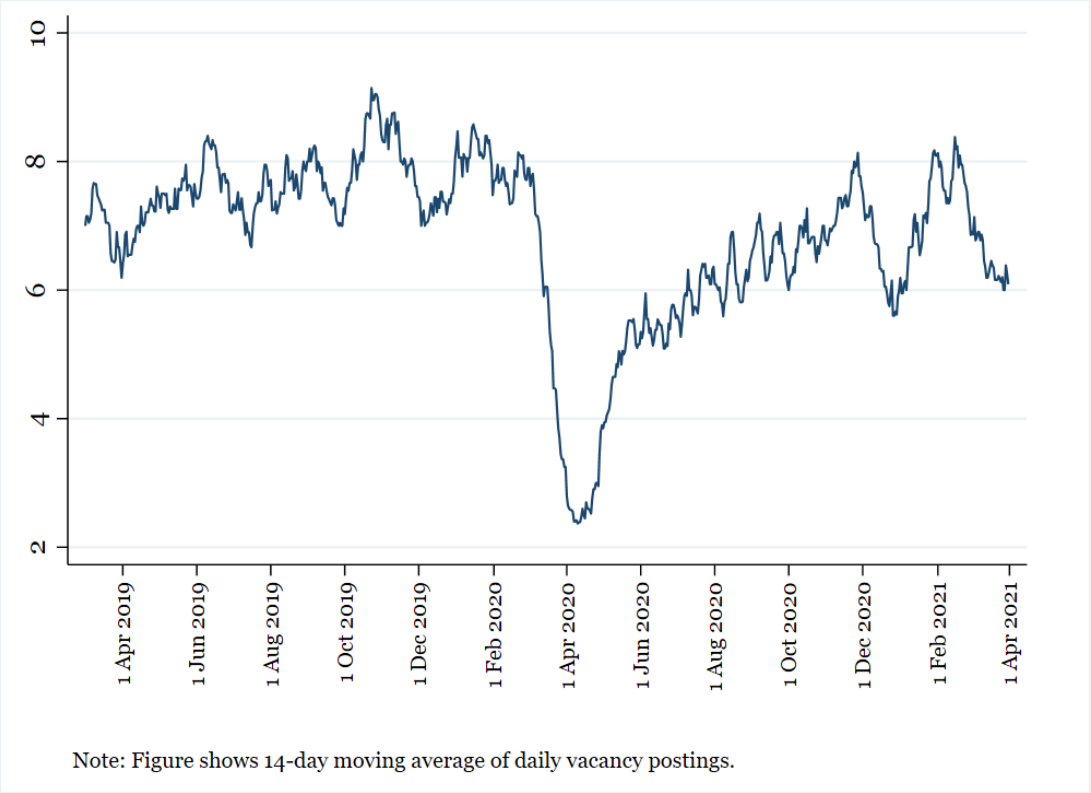
Table 3: Predictors of redeployment during the first COVID-19 wave

	(1)	(2)
	Redeployment indicator	% of FTE health visiting staff redeployed
Rate of COVID-19 cases up to 19 March 2020	-0.004	-0.211
	(0.005)	(0.130)
Deprivation dummies		
- High deprivation (ref. low)	-0.145	-5.283
	(0.087)	(2.898)
% of children looked after	0.000	-0.025
	(0.001)	(0.023)
% of children referred to services but under threshold	-0.001	-0.227
	(0.005)	(0.159)
% of child hospital admissions for injuries	0.001	-0.030
	(0.001)	(0.023)
% of population aged 0-4	0.063	1.755
	(0.052)	(1.642)
Provider type (ref. council)		
- Provider is NHS Trust	0.473***	10.840**
	(0.129)	(4.057)
- Provider is private	0.505**	21.685**
	(0.176)	(7.045)
Low deprivation	0.000	0.000
	(.)	(.)
Provider is council	0.000	0.000
	(.)	(.)
Observations	125	125
R-squared	0.147	0.184

Note: Table presents results from models estimated via Ordinary Least Square. For both dependent variables, models that better fit the dependent variable (such as logit and fractional models) were tested and yielded similar results. The outcome variables are: 1) a dummy for whether there was any redeployment in the Upper-Tier Local Authority (UTLA) during the first COVID-19 wave in 2020, and 2) the percent of FTE health visiting staff (both health visitors and clinical skill mix staff) redeployed in the Upper-Tier Local Authority (UTLA) during the first COVID-19 wave in 2020. 'Rate of COVID-19 cases up to 19 March' is the cumulative lab-confirmed cases rate per 100,000 resident population in the UTLA up to 19th March 2020. Source: GOV.UK Coronavirus (COVID-19) in the UK. 'Deprivation dummies' are for the rank of the index of multiple deprivation for 2019. Lower ranks indicate more disadvantaged UTLAs. High deprivation indicates UTLAs below the median rank. Low deprivation indicates UTLAs above the median rank. Source: ONS. 'Provider type' is the type of provider in February 2020. Source: Freedom of Information requests. '% of children looked after' is the number of children looked after per thousand children aged 0-4 in the UTLA for 2019, multiplied by 100. Source: Department for Education (DfE). '% of children referred to services but under threshold' is the number of children per thousand aged 0-4 referred to children's services but not meeting thresholds in the UTLA for 2019, multiplied by 100. Source: Children's Commissioner/DfE. '% of child hospital admissions' is the number of child hospital admissions caused by unintentional and deliberate injuries per thousand children aged 0-4 in the UTLA for 2018/19, multiplied by 100. Source: Children's Commissioner. % of population aged 0-4' is the number of children aged 0-4 as a fraction of all persons in the UTLA for mid-2019, multiplied by 100. Source: ONS. Robust standard errors are shown in parentheses. Sample size restricted to local authorities with complete data across all variables to enable comparison.

* p<0.05, ** p<0.01, *** p<0.001

Figure 7: New job postings for health visiting roles



Note: Figure shows 14-day moving average of daily vacancy postings.

4. Discussion

Statement of principal findings

We find that health visiting teams were over-stretched before the COVID-19 pandemic: 80% of local authorities in England had caseloads greater than 250 children per FTE caseload holding staff, the maximum recommended by the Institute of Health Visiting; in some areas, the caseload was over 1,000 per staff member.

Our findings show that health visiting team composition varies greatly, with a range of health professionals and practitioners supporting health visitors in delivering the 0-5 HCP. This practice developed following publication of updated guidance on the 'Healthy Child Programme – Pregnancy and the First Five Years of Life' in 2009 (11), which emphasised the use of integrated services to deliver the HCP.

Health visitors hold caseload across all local authorities, and within a local authority staff holding caseload are largely health visitors. Yet, clinical skill mix staff also hold caseload in almost half of local authorities. There is not yet evidence on the effects of clinical skill mix staff versus health visitors holding caseload, but the legislation governing universal health visitor reviews states that health visitors must be involved in either supervision or be accountable for reviews if other clinical skill mix staff are delivering the 5 HCP reviews. The IHV advise that health visitors are not substituted by clinical skill mix staff, but rather support health visitors in delivering the HCP. We do note, though, that our regression results show that the high-deprivation local authorities are associated with a reduced proportion of clinical skill mix staff holding caseload.

In many local authorities, providers managed to avoid any redeployment of health visitors, but there was substantial variation across the country, with high rates of redeployment in some

areas. A report by the Isos Partnership for the First 1001 Days Movement provides one potential factor that determined redeployment – "we were told that the level of redeployment of health visitors was more to do with the nature of the employer organisation than anything else" (20). Indeed, regression results show that health visiting staff working in NHS Trusts and private providers were more likely to be redeployed than those working in councils. Reassuringly, high deprivation areas are associated with a reduced percentage of health visiting staff redeployed. Clinical skill mix staff suffered greater redeployment than health visitors, which could be linked to the fact that they do not hold caseload in most local authorities. Staff were redeployed as soon as the NHS England guidance on prioritisation of community services was published and many had not returned by 3 June, when health visiting services were supposedly restored. During this time families were unlikely to be receiving their normal health visiting service, given that three of the five mandated HCP contacts were paused for families who were not identified as vulnerable or in clinical need (under NHS England guidance).

Strengths and weaknesses of the study

A key strength of our study is that we provide new data on the exact scale of redeployment of health visiting staff across local authorities in England. In this way our study is the first of its kind and the most informative data source. Prior to this research, existing evidence on redeployment experienced by health visiting staff was based on survey data (21, 22, 23), that may be biased if some local authorities are under or over-represented in the sample. Conti & Dow (21) find that 61% of respondents reported redeployment of at least one member of their health visiting team between 19 March to 3 June. The Institute of Health Visiting (22) find that 66% of respondents experienced some redeployment of practitioners in their team, and Barlow et al. (23) find that two-thirds of community-based practitioners delivering services for pre-school children (of which 74% were health visitors) had colleagues within their team/practice who had been redeployed. The survey estimates of redeployment could be higher because those responding to the surveys worked in local authorities that suffered higher levels of redeployment, and so were more willing to report it, for example.

Not only can we document redeployment at the local authority level, but our data provides a picture of health visiting prior to the pandemic. Data relating to health visiting staffing numbers and caseload at the local authority level is not published or accessible, so our study shows the staff mix and brings to light the high caseloads of health visiting staff before the COVID-19 pandemic struck. We build on previous work using FOI data from 2018 to examine health visiting numbers and caseloads (24).

A limitation of the study is that we do not have a complete dataset as not all providers have responded to our request (still we received data from many private providers who are not legally obliged to answer to FOIs). Our data on staff numbers and staff redeployment covers 93% of local authorities, so we capture nearly all of them. A second limitation is that we cannot examine duration of redeployment at the individual level and whether redeployment occurred in waves. Unfortunately, this information was too time consuming for providers to collect and so was not feasible through the FOI process.

Conclusions and implications

The COVID-19 pandemic and the government-imposed lockdown have been extremely difficult for many families, and particularly so for new parents (25). Redeployment will likely have had material impacts on children and families who rely on health visiting professionals for care, support, and health and child development advice. Previous findings from our survey of health visiting staff have revealed that redeployment meant that in many cases the number of children staff were responsible for increased (21). As documented here, health

visiting services were already stretched prior to COVID-19, following years of public health funding cuts. The COVID-19 pandemic has further exacerbated existing pressures. With redeployment rates differing substantially across local authorities, young children and families' access to health visiting services and level of care and support available will have been determined by their postcode. These geographical differences in health visiting service provision during the first COVID-19 wave are inequitable and undermine the universality of health visiting in England.

Our findings have important implications for Government, policymakers, and public health officials. We recommend increased public health funding to local authorities, a clear workforce plan to address the backlog of missed appointments and increased demand for support, additional contacts for new parents who had their first child during the pandemic, and a cross-government strategy to reduce inequalities.

Data Sharing Statement: The data will be deposited in the UK Data Archive upon completion of the projects funded by the European Research Council and by Leverhulme Trust, once the related papers will be published.

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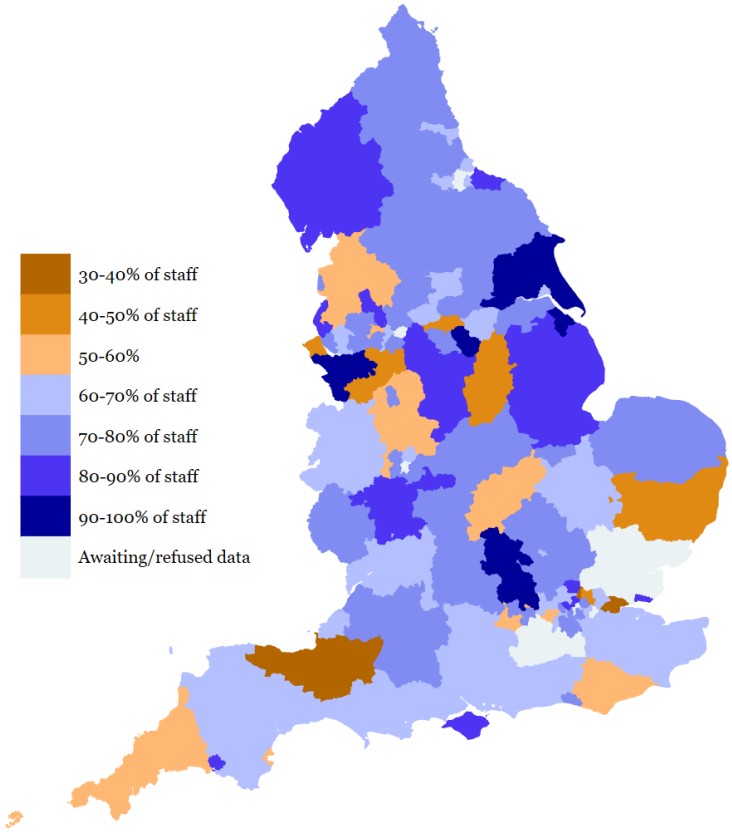
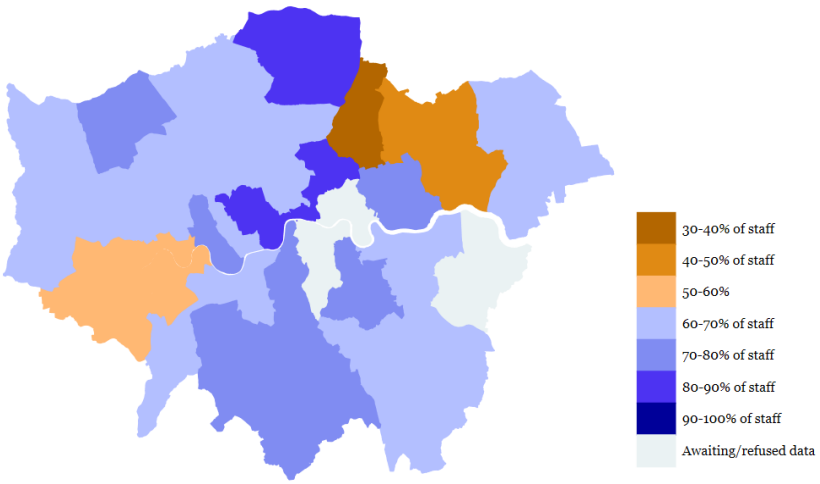
Appendix

Figure 8: FTE health visitors as percent of all FTE staff working in health visiting teams on 1st February 2020, by Upper-Tier Local Authority in England



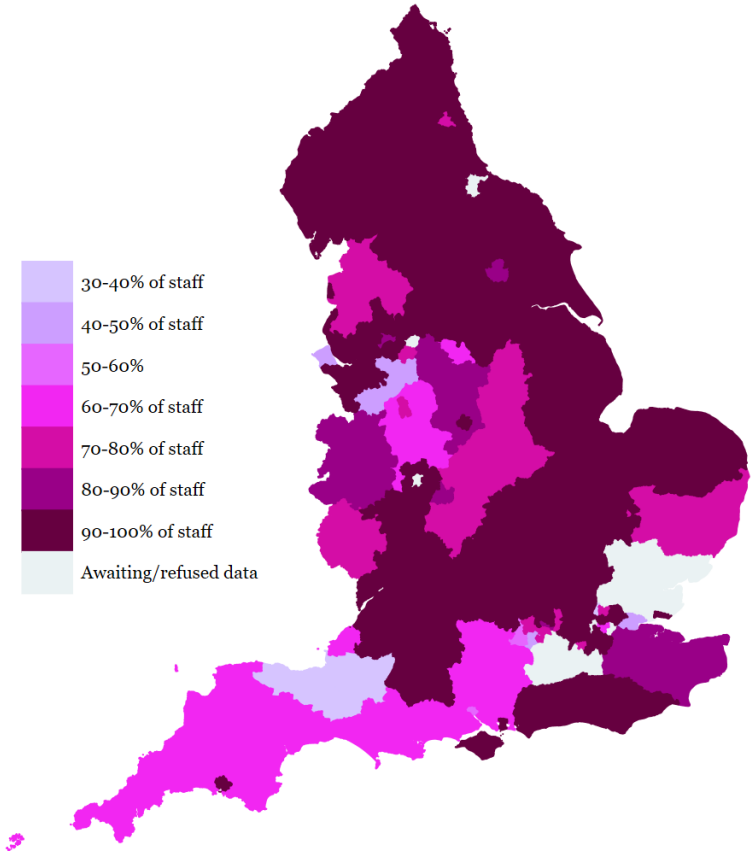
N=142.

Figure 9: FTE health visitors as percent of all FTE staff working in health visiting teams on 1st February 2020, by London Borough



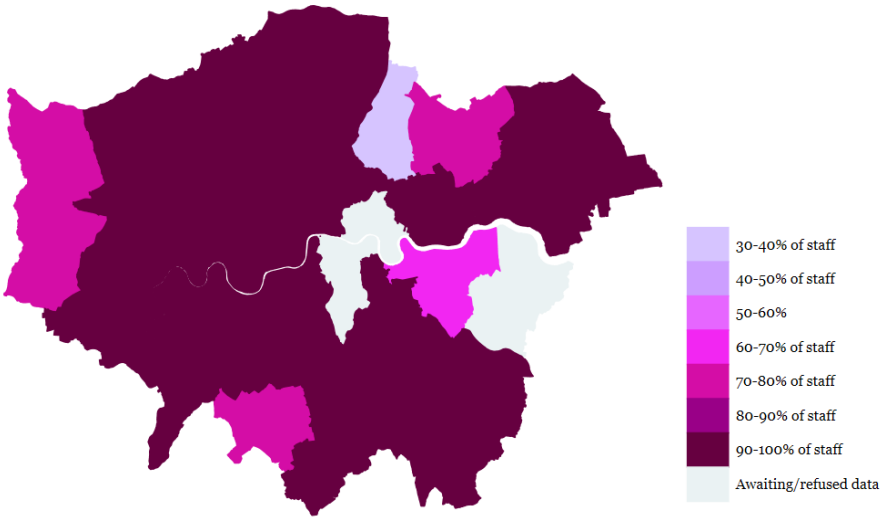
N=30.

Figure 10: Percentage of caseload holders who are health visitors on 1st February 2020, by Upper Tier Local Authority in England



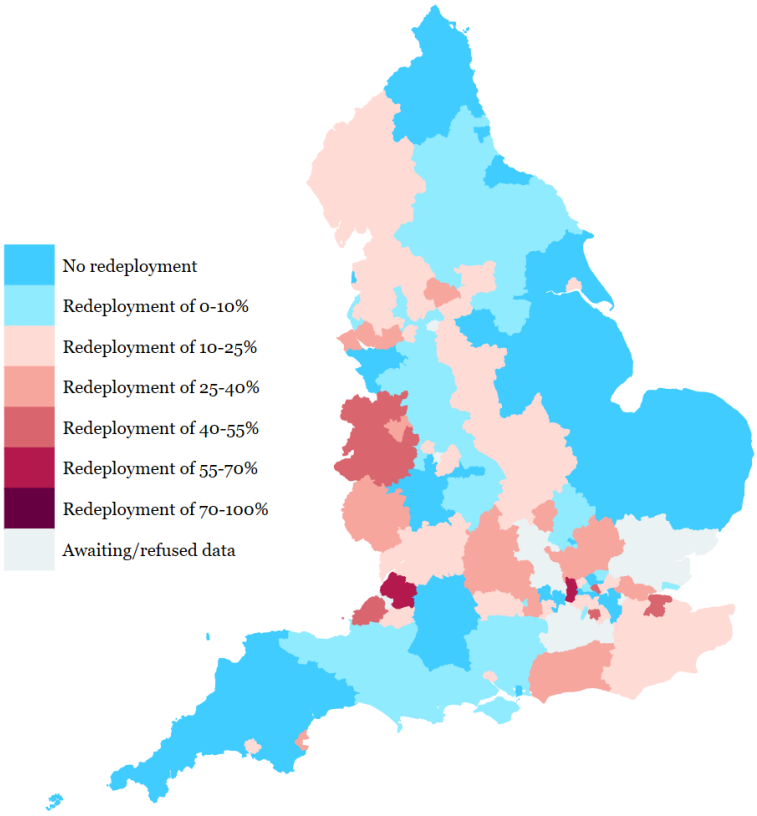
N=142.

Figure 11: Percentage of caseload holders who are health visitors on 1st February 2020, by London Borough



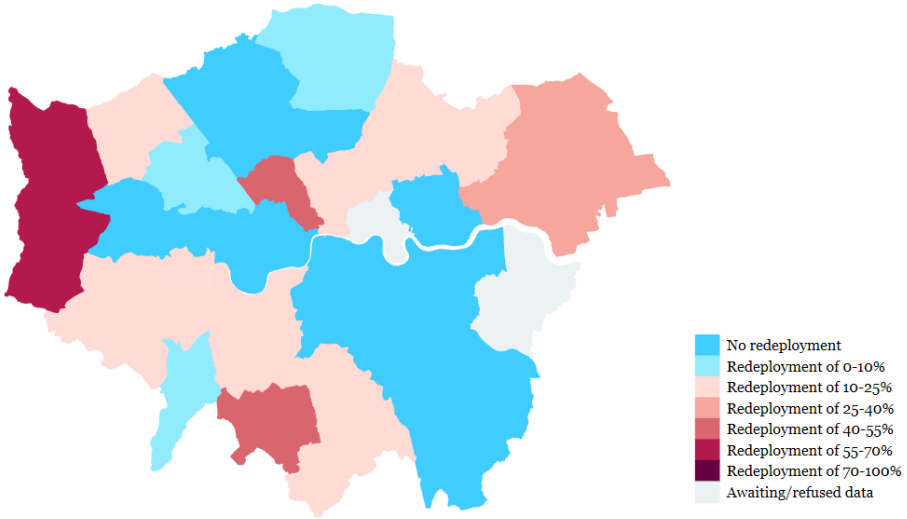
N=30.

Figure 12: Percent of total staff in health visiting teams redeployed up to 1st September 2020 due to COVID-19, by Upper-Tier Local Authority in England



Note: N=142.
Bristol data is estimate provided by the service as FTE data was not collected.

Figure 13: Percent of total staff in health visiting teams redeployed up to 1st September 2020 due to COVID-19, by London Borough



N=31.